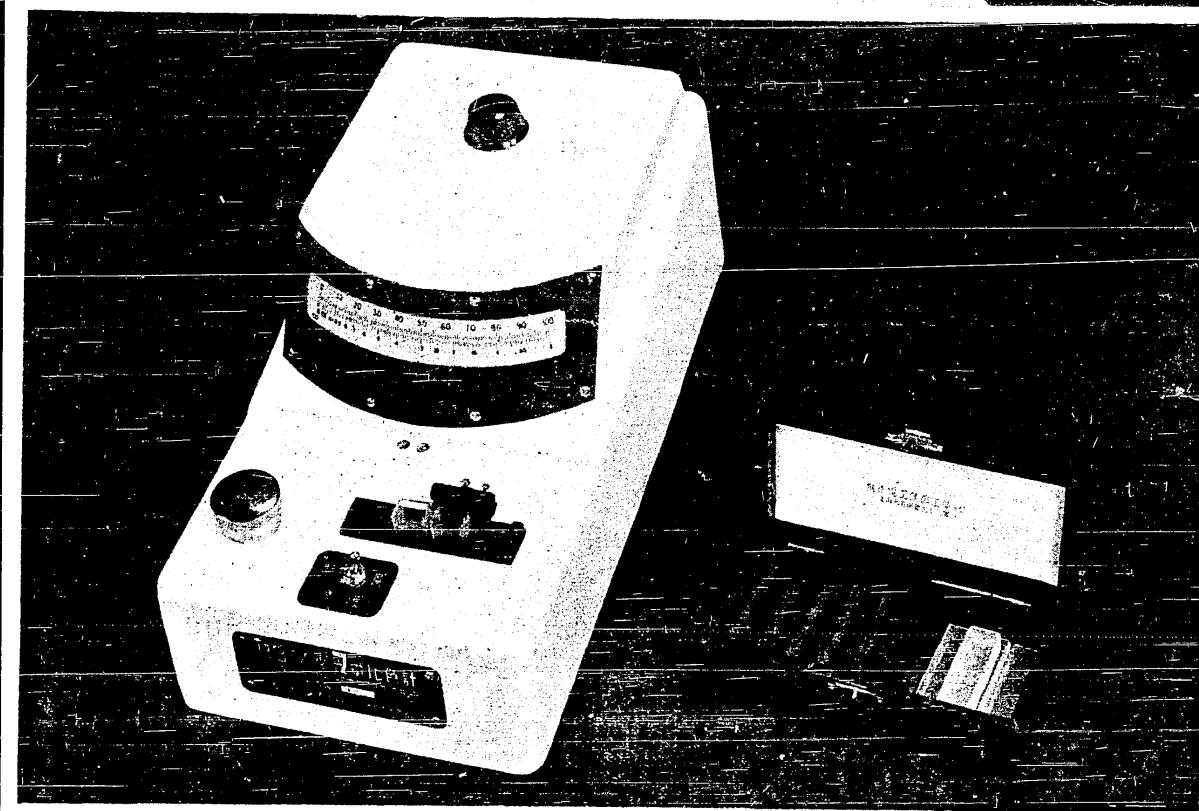


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MODEL 93B



中國儀器進口公司

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

PHOTO ELECTRIC COLORIMETER MODEL 93B

The Photo Electric Colorimeter Model 93B embodies the most recent improvements in design for efficiency, compactness and economy. This instrument is extremely simple to use and is easily standardized by reading the transmittancies of a number of solution of predetermined concentrations prepared in accordance with a specific chemical procedure. These readings, when plotted on a semilogarithmic scale against the known concentration on a linear scale, yield an analytical (calibration) curve or standard against which the unknown solutions of that technique may be compared.

This instrument is designed to work either from a 6 volt battery or direct from a 220-250 volt a. c. mains supply through a constant voltage transformer. The light passes through an absorption cell with an optical path of 10 mm., which holds the solution under test. Through the selected filter the transmitted light reaches the photo-cell, the output current of which is indicated on the galvanometer.

The galvanometer is calibrated with a linear scale 0-100 underneath which is a logarithmic scale for calculation of optical density. A set of six filters is supplied.

PHOTOELECTRIC TURBIDIMETER MODEL 71B

STAT



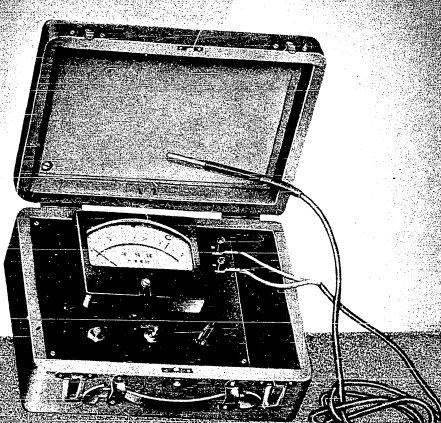
PHOTOELECTRIC TURBIDIMETER MODEL 71B

The Photoelectric Turbidimeter Model 71B is a photoelectric instrument for measuring the light transmission of liquids in Nessler tubes, particularly suited for the measurement of faint turbidity in the field of water testing. It is also suited for the measurement of samples of pale-colour in all colorimetric analysis and colour standardization and grading of light coloured liquid products.

The light source of the instrument can be operated either from the 105-125 volt 60 cycle A.C. power line or from a 6-8 volt storage battery. The light projected vertically upward by a concentrated filament lamp. It is collimated by a lens to form a parallel beam, and passes through the bottom of the tube and the liquid through a colour filter. The light strikes a photocell and is registered by a spotlight galvanometer of high sensitivity. Two scales are provided, the one indicating percent transmission, the other optical density units.

The Reference Standard for turbidity tests, is a suspension of 1000 parts per million of silica (Fullers earth or diatomaceous earth) in distilled water. This suspension of 1000 ppm. has been assigned the value "Turbidity 1000". To calibrate the instrument for turbidity, the 1000 ppm. reference standard is to be diluted with distilled water to furnish turbidities of 10, 20, 40, 60 80 and 100 ppm. These diluted turbidity standards are then read in the instrument, using the blue filter against distilled water as the blank. By plotting the density readings against ppm. a curve will be obtained. Once this calibration curve has been established, in routine test, it is only necessary to measure the sample with blue filter after which the curve furnished the Turbidity value.

Thermistorized Thermometer



CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
SHANGHAI BRANCH
IMPORTERS & EXPORTERS

THERMISTORIZED THERMOMETER

(For Hospital and Medical Use)

The Thermistorized Thermometer can be considered as sensational novelty for hospitals and medical uses. This thermometer is fitted with an electric torch battery (interchangeable) and, therefore, completely independent from the electric circuit.

This thermometer shows immediately the temperature at any part of the human body and gives the following possibilities and advantages to the physician :

1. Immediate indication of the measured temperature, within 1-3 seconds.
2. In order to investigate disturbances of circulation of the human blood, the temperature of the skin can be measured practically at the same time on all parts of the body.
3. Owing to the difference of temperature, it will be possible also to localize inflammations.

STAT



PHOTOMETER
MODEL 53

中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

MODEL 53 PHOTOMETER

Model 53 Photo Meter is designed specially for measuring intensity of illumination in public auditoriums, schools, hospitals, factories and laboratories. It is a combination of high grade selenium photocell and a precision microammeter. The latter is calibrated to read meter-candle from 0-25000 lux, divided into 3 ranges. A ranging switch is found on the left of the panel. The switch also provides circuit breaking action for safety control to protect the photocell from the strong illumination. The calibration adjusting knob is attached to the right side of the panel. It is easy to adjust the calibration of the meter scale caused by the physical variation of the sensitive microammeter.

The photocell produces a current proportional to the intensity of illumination falling upon it. This instrument may be used for checking either daylight or artificial illumination in laboratories for chemical analysis.

A glass filter sputtered with gold in high vacuum system should cover on the photocell when measuring under strong illumination.

It is simple in operation and gives quick and accurate reading of illumination.

It is compact and light weight with overall dimension of $7\frac{1}{2}$ by $9\frac{1}{2}$ by $4\frac{1}{2}$ inch.

PORTABLE POTENTIOMETER TYPE 703

STAT



CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

I APPLICATIONS

Portable potentiometer Type 703 is an instrument for measuring the DC electromotive force. Its range is from 0—71 millivolts.

This portable potentiometer is especially suitable for direct measuring of thermocouples, for comparison against standard thermocouple, or of calibrating temperature indicating millivoltmeters.

II CONSTRUCTION

Circuit diagram of the portable potentiometer is as follows.

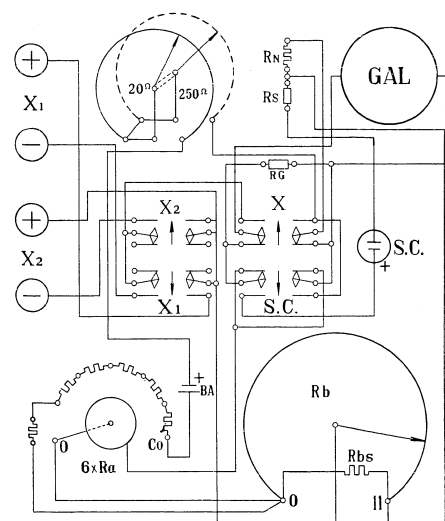


FIG 1

1. The measuring part comprises a range selecting switch and a slide wire. The range switch has six ranges, and the slide wire had a total range of 0–11 MV with 0.1 MV per division.
2. The working current of the potentiometer is 3 MA and is adjusted to this value by comparison with an internal standard cell.
3. The current adjuster comprises a two-ganged rheostat. (fine and coarse rheostats in series). It is so arranged that when turning the knob in one direction the fine and coarse rheostats rotate together and coarse adjustment is obtained; when turning the knob in the opposite direction only the fine rheostat rotates, and thus a finer adjustment is obtained.
4. A pointer galvanometer is used for null indicating.
5. A protecting resistor is inserted in series with the standard cell circuit. When the voltage of the battery falls beyond the adjusting limit of the rheostat, this resistor will protect the S.C. from being damaged by over current.

III TECHNICAL CHARACTERISTICS

- | | |
|--|--------------------------------|
| 1. Range of the potentiometer | 0–71 mv |
| 2. Maximum error of the potentiometer at $20^{\circ} \pm 2^{\circ}\text{C}$ and relative humidity 30–80% | ± 0.1 mv |
| 3. Auxiliary error when ambient temperature is $20^{\circ} \pm 10^{\circ}\text{C}$ | less than $\pm 0.2\%$ |
| 4. Specification of the pointer gal. | |
| a/ Internal resistance | 15 ohms |
| b/ Critical resistance | 60 ohms |
| c/ Voltage constant | less than 200 $\mu\text{V/mm}$ |
| 5. Dimension of the case | $192 \times 274 \times 234$ mm |
| 6. Weight of the instrument | 5.5 Kg |

IV COMPLETE EQUIPMENT

The instrument is supplied with following parts:

- | | |
|---|--------|
| 1. Standard cell (installed in the cabinet) | 1 pc. |
| 2. Dry cells (installed in the cabinet) | 3 pcs. |
| 3. Instruction Manual | 1 pc. |
| 4. Certificate of Test | 1 pc. |

V OPERATION

1. To Measure E.M.F.
 - 1) Release the pointer of the gal by pushing the button backward. Adjust the zero adjuster until the pointer indicates in the zero position.
 - 2) Connect the unknown E.M.F. to the posts X_1 or X_2 . Set the lever switch A to "S.C.". Adjust the current adjuster until the galvanometer indicates zero. The working current is then adjusted to the rated value.
 - 3) Set switch A to "X", switch B to " X_1 " or " X_2 ", balance the potentiometer by turning the range switch and slide wire dial until the gal. indicates zero.
 - 4) Reading on the range switch plus reading on the slide wire dial will be the value measured.
 - 5) Push the lever switch to the middle position when the instrument is not in use. The galvanometer should also be locked.
2. Change battery if the current adjusting rheostat cannot set the gal. to zero position.
3. For calibrating millivoltmeters, connect as shown in Fig. 2

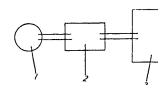


FIG 2

1. Millivoltmeter 2. Variable voltage source 3. Portable potentiometer
4. For convenience of checking ordinary thermocouple against a standard element, connect these two couples to the posts "X₁" and "X₂" respectively. After adjusting the working current, set lever switch A to X, and proceed to measure the couples alternately by setting the switch B to "X₁" and "X₂". Thus any error due to time delay in changing thermocouples may be avoided.
5. The wooden case of the instrument should only be placed in the position supported by the rubber plugs. To place the case in any other position will damage the standard cell inside the instrument.
6. The instrument should be placed in a surrounding temperature of + 5° to + 35°C. relative humidity of 80%. Avoid any direct sunlight.

Note: Mistakes in printing:-

Page 2, line 8:	rheostats for rhostats
" 2, " 14:	circuit for circult
" 2, " 17:	TECHNICAL for TECHENICAL
" 3, " 6:	Certificate for Cartificate
" 3, " 9:	gal. for gal
" 3, " 22:	use. for use

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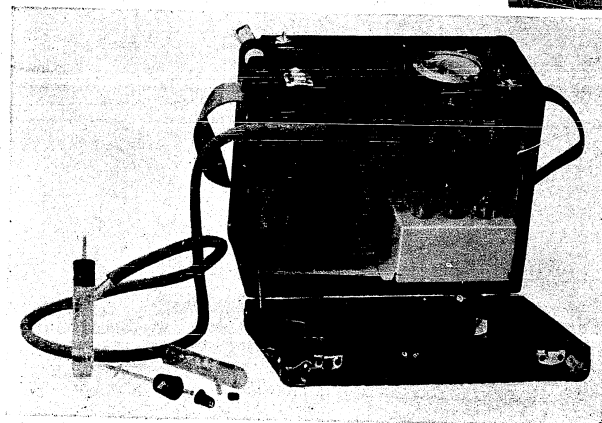
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6
MIDGET DUST IMPINGER

MODEL 38B

STAT



中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

MODEL 38B MIDGET DUST IMPINGER

The model 38B Midget Dust Impinger is a small, compact instrument for standard measurement of atmospheric dust. The importance of the hazard of dust in the industrial plants to health and property is generally recognized. To prevent such disasters an analysis laboratory of dust containment in the air should be well equipped. We are glad to suggest that our Midget Dust Impinger will fulfil all the requirements of dust analysis and brings efficiency to work desired.

This latest development in dust sampling apparatus overcomes the main disadvantages of the regular size impinger—its bulk, weight and power requirements—yet it retains the characteristics which yield reproducible results and make the impinger indispensable for control work and dust surveys.

The pump (Rotary Vacuum Pump) of this impinger, operating in conjunction with a vacuum regulator, maintains an unfluctuating suction regardless of minor variation in the rate or smoothness of cranking.

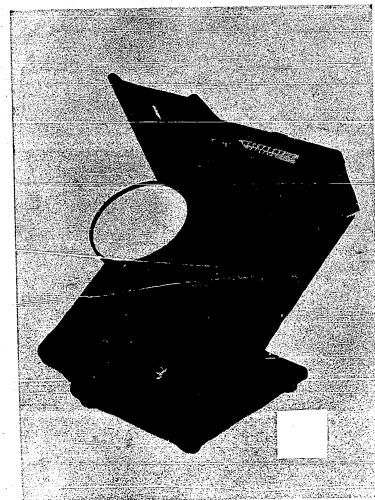
Isolated locations, confined spaces, the absence of electricity or compressed air are not obstacles to the use of the portable Midget Dust Impinger since it can be carried and operated almost everywhere. This apparatus makes it possible to conduct dust surveys easily and quickly.

The portable Dust Impinger is supplied complete with dust collecting tubes, 9 impinger tubes, rubber, stopper, carrying case and shoulder strap. It is 35.5 cm long, 23 cm wide and 30.5 cm deep, weights 10 kgs.

①

COLONY COUNTER^{STAT}

MODEL 54



中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
SHANGHAI BRANCH
(IMPORTERS & EXPORTERS)

MODEL 38B MIDGET DUST IMPINGER

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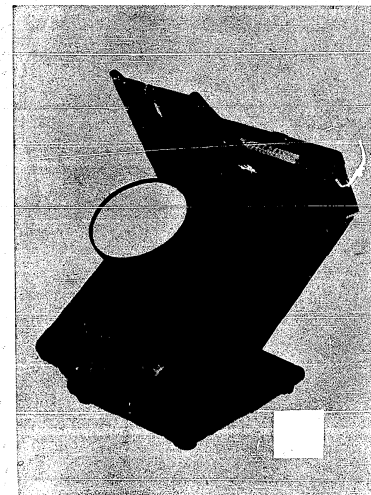
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COLONY COUNTER

STAT

MODEL 54



中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
SHANGHAI BRANCH
(IMPORTERS & EXPORTERS)

MODEL 54 COLONY COUNTER

This Colony counter is an improved instrument and is recommended for Laboratories of Health Department and Hospitals, Water Testing and Milk Testing Laboratories.

It is so designed that this equipment will give maximum testing speed for quick counting of colony in high accuracy. It provides dark field illumination and bright dividing line for making bacteria colony counts.

The case and its stand are made of sheet metal, well built and finely finished on the outside in black wrinkle enamel paint. The angle of the case is adjustable to suit best convenience of the observers by means of adjusting the turning knob of the slot arm.

The 60 watt incandescent bulb is located in the upper end of the Colony Counter and its illumination is intensified by a mirror so placed at the lower end that the light is reflected back to the lower surface of the counting plate, striking it at the same acute angle as the light from the bulb. This principle increases the contrast between the colony and the culture medium. It improves the visibility so that very small colonies can be seen. As a result the observer works efficiently and obtains accurate data quickly.

The $\frac{4}{8}$ inches lens brings the entire dish into view at a magnification of $1\frac{1}{2}$ diameter.

A mechanical counter is attached on the left side of the case, it provides automatic recording by finger pressure. A knurled reset knob is figured to zero.

The equipment is 20 cm. wide, 40 cm. long, 33 cm. deep with two incandescent bulbs for spare.

TYPE 101

STAT



PORTABLE
KELVIN
BRIDGE

INSTRUCTION MANUAL

Portable Kelvin Bridge is a convenient instrument for low-resistance measurement in the range of 0.0001–10 ohms, or for measuring the conductivity of wires.

The circuit diagram of the bridge is as follows:

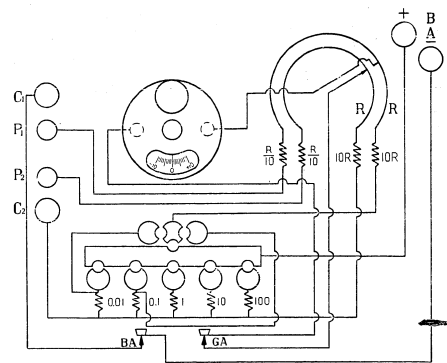


FIG 1

CONSTRUCTION

A knob at right of the panel is used to vary the position of the galvanometer circuit in the double slide wire, and therefore the reading of the dial. The galvanometer is installed at the left of the panel, with a ratio block in the lower part of the meter.

(1) The galvanometer

A zero adjusting cap (7 in fig. 2) is mounted on the upper part of the galvanometer. Care should be taken not to turn violently to avoid damage of the adjuster. A button (9 in fig. 2) is provided to lock the pointer of the galvanometer. To lock the pointer, push the button forward, to unlock, push backward.

(2) Ratio Block

Two plugs are used to change the ratio of the bridge (10 and 11 in fig. 2). Plugs should be pressed firmly to ensure minimum contact resistance.

(3) Slide Wires

The reading dial comprises two slide wires. Turning the knob of the dial will vary the position of the galvanometer in the slide wires.

(4) Keys

Key "G" (6 in fig. 2) may be locked by pressing down and turn clockwise.
Key "B" (5 in fig. 2) cannot be locked.

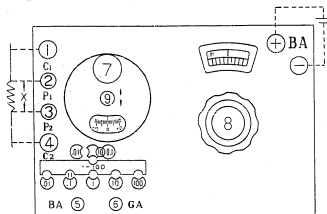


FIG 2

- (5) Weight of the instrument approx 3.4 kg.
Dimension shown as follows:

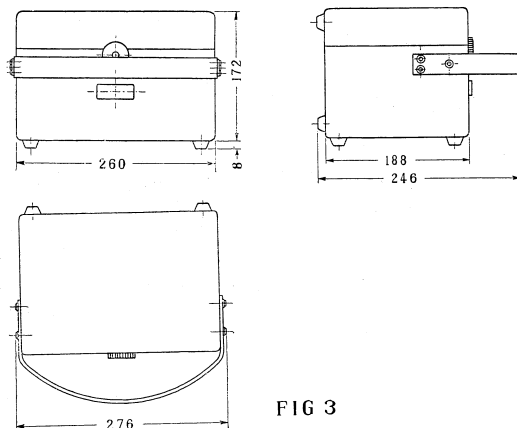


FIG 3

OPERATION

- (1) Resistance lower than one ohm must have four terminals, connect as shown in fig. 2. Posts No. 1 and No. 4 are current terminals, and posts No. 2 and No. 3 are potential terminals. For resistance higher than one ohm, posts No. 1 No. 2, and No. 3 No. 4 may be tied up with a short bus wire respectively, and resistance to be measured is connected to posts No. 2 and No. 3.
- (2) Connect battery to posts "B+" and "B-". Use three 1.5v dry cell (connect in parallel), or one 2v 60Ah storage battery. When measuring low resistance, better use 4v storage battery. Key "B" (5) should not be pressed too long to avoid excessive power consumption.
- (3) Press down key 6 to close the galvanometer circuit. To lock the key, press down and turn clockwise.
- (4) Release the galvanometer lock 9, and turn the zero adjuster 7 until the pointer indicates in the zero position. Set the plugs in the corresponding holes as follows:

Measuring Range	Position of Plug 10	Position of Plug 11
1—10 Ω	1—100	100
0.1—1 Ω	1—100	10
0.01—0.1 Ω	1—100	1
0.001—0.01 Ω	0.1	0.1
0.0001—0.001 Ω	0.01	0.01

- (5) Press down key 5, and balance the bridge by turning the dial 8. The dial reading multiplied by the value indicated at plug 11 will be the result of the unknown resistance.

EXAMPLE

The dial reading 0.025

The plug in the 0.1 position

$\therefore R_X = 0.025 \times 0.1 = 0.0025 \text{ ohm}$

- (6) The null indicator of the bridge is a sensitive suspension type galvanometer avoid excessive vibration. Push forward the button 9 to lock the pointer when not in use.

- (7) To measure the conductivity of copper wire, use following formula:

$$\text{Conductivity} = R_t / R_X \times 100\%$$

R_X = Resistance of copper wire to be measured at $t^\circ\text{C}$

R_t = Resistance of standard copper wire of same diameter at $t^\circ\text{C}$

R_t may be calculated as follows:

$$R_t = R_{20} [1 + 0.003(t - 20)]$$

where R_{20} is the resistance of standard copper wire of same diameter at 20°C .

- (8) The instrument should be kept in dry place, and should avoid any harmful atmosphere.

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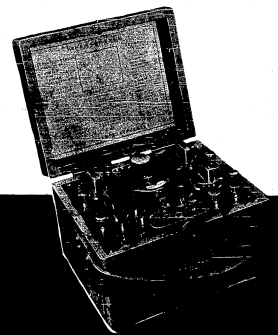
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PORTABLE
WHEATSTONE
BRIDGE

STAT

TYPE 102



中國儀器進口公司

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
IMPORTERS & EXPORTERS

I APPLICATIONS

Portable wheatstone Bridge is designed for general measurements of resistance from 1 to 107 ohms, and for locating faults in electrical cables.

The circuit diagram is as follows:

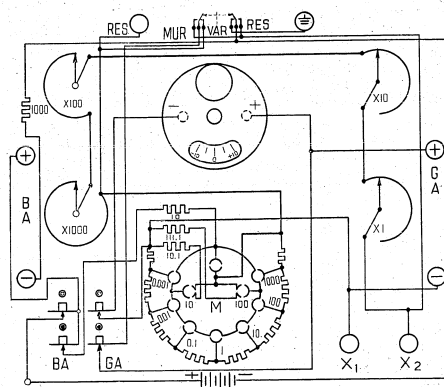


FIG 1

II CONSTRUCTION

The panel of the instrument is made from high quality bakelite, therefore good insulation is ensured. Four knobs for varying the resistance units are mounted on the panel, and a lever switch is placed at the upper part of the panel. The lever switch has three positions i.e. RES, MUR, VAR. A pointer galvanometer is situated in the middle of the panel. Below it is the ratio arm plug. The bridge has eight binding posts, and four keys are provided for gal. and battery.

- 1) Galvanometer. A zero adjusting cap is mounted on the galvanometer. Turning the cap will adjust the zero position of the pointer. Do not turn violently to avoid damage to the pointer. To lock the pointer, when not in use, push forward the button.
- 2) Switch Dial. Four bakelite knobs are mounted on the panel to vary the resistance of the measuring arm.
- 3) Ratio Arm. The ratio arm has 10 plug holes. Three holes for Murray loop test are surrounded by 7 holes for resistance measurements.
- 4) Lever Switch. The switch is mounted on the upper part of the panel. It has three positions, i.e. RES, MUR, VAR.
- 5) Keys: Four keys are situated at the lower left corner of the panel. Keys 3 and 7 (Fig. 2) are for gal. and 2 and 6 are for battery.

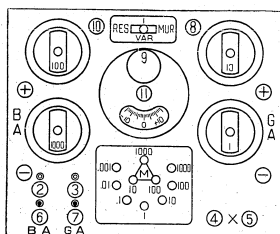
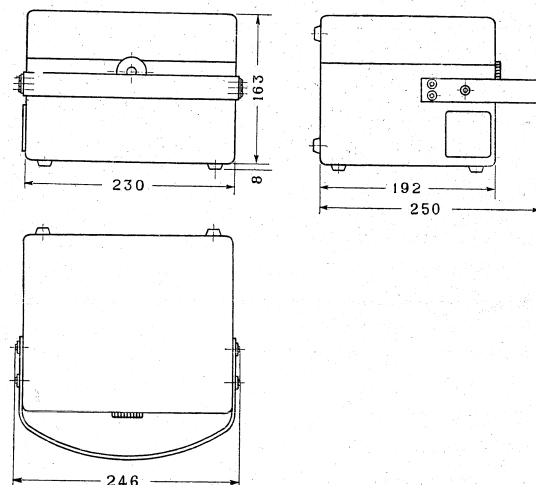


FIG 2

- 6) Case: A small compartment for installing dry cells is provided at the lower part of the case. A thick aluminum plate is used as a cover for the compartment.
- 7) Weight of the instrument: 3.9 Kg. Dimensions: as in Fig. 3.



III OPERATION

I Resistance Measurements

A. Resistance ranging from 1—10⁵ ohms.

- (1) Push the lever switch 1 towards "RES". Release the gal. lock by pushing the button downward. Adjust the pointer to zero position.
- (2) Connect the unknown resistance R_x to posts "X₁" & "X₂".
- (3) Lock the keys 2 & 3 (Fig. 2)
- (4) Set the plug to the corresponding ratio as shown in the table below

Unknown Resistance	Ratio
<10Ω	0.001
10—100	0.01

100—1000	0.1
1000—10000	1
10000—100000	10

Table 1

Internal Gal. & Bat.	External Gal. Internal Bat.	External Bat. Internal Gal.	External Gal & Bat
Press Gal	Press Gal	Press Gal	Press Gal

(5) Balance the bridge by varying the rheostat and at the same time press down keys 6 & 7. Positions of the keys for connecting external battery and galvanometer are shown in table 1.

(6) Let the value of the measuring arm is R, and ratio A, the unknown resistance R_X is

$$R_X = A \times R$$

B. Resistance ranging from 10^5 — 10^7 ohms.

- (1) Connect as shown in Fig. 4.
- (2) For keys and gal. same as in A (1)
- (3) For external battery connection

release key 2 and close k 1. for external gal., release key 3 and lock the pointer of the gal. in the bridge, then close key 2.

- (4) The ratio setting, voltage applied, and sensitivity of the gal. should be as follows:

Unknown Res.	Ratio	External Voltage	Sensitivity of Gal.
10^5 — 10^6 ohms	100	15	190mm/uA
10^6 — 10^7 ohms	1000	25	> 100mm/uA

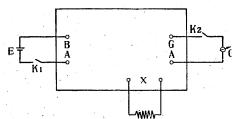


FIG 4

II Used as a resistance box

Release all the keys, and posts 5 & 10 (Fig 2) will be terminals of an individual four decade resistance box.

III Locating fault cables

Fault cables such as breakdown of insulation, breaking of wire, may be located by this instrument.

A. Murray Loop Test

Murray loop test is used for test of ground of a single wire cable. Connect as shown in Fig. 5.

- (1) Join the faulty wire to a good one at the distant end of the cable; connect faulty wire to X_2 and good wire to X_1 . Connect post 8 to ground. Set ratio plug to M1000. Push the lever switch at MUR-Vary rheostat to balance the bridge, if a satisfactory balance cannot be obtained with M1000 change to M100 or M10.

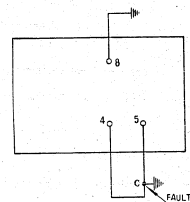


FIG 5

- (2) Measure the total resistance of the wire and call it L.
- (3) If the total length of the cable is L' , then Resistance R_X between 5 and C may be calculated from the following:

$$R_X = \frac{L \cdot R}{M + R} \text{ ohms}$$

$$\text{Length of } X = \frac{2L \cdot R}{M + R} \text{ ohms}$$

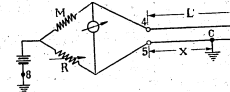


FIG 6

B. Varley Loop Test

- (1) Join the faulty and good wires at the distant end of the cable; connect the faulty wire to X_2 and the good wire to X_1 . Connect post 8 to ground. Set lever switch at VAR. Set ratio plug A at 0.1 or 0.01 (Fig 7) and vary rheostat R to balance the bridge.

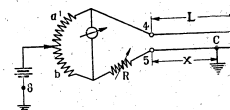


FIG 7

- (2) Measure the total resistance of the wire and call it L .
 (3) If the total length of the cable is L' , then resistance R_x between 5 and C may be calculated from the following formula:

$$R_x = \frac{L - AR}{A + 1}$$

If the length of the cable is L' , then length of X will be:

$$X = 2L' \frac{R_x}{L}$$

C. Three Varley Method

This method is used to locate the fault of three wire cable.

- (1) Join the three wires at distant end of the cable; Connect faulty wire to X_2 , one good wire to X_1 , the other good wire to post 8. Push lever switch to VAR. Set the ratio plug to an appropriate value A . Balance the bridge and obtain reading R_1 (Fig 8)

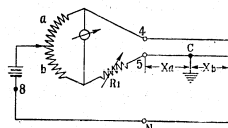


FIG 8

- (2) Connect post 8 to ground instead of good wire. Balance the bridge with the original ratio, and obtain reading R_2 (Fig 9) Resistance of X_b is

$$X_b = \frac{A}{A+1} (R_2 - R_1)$$

- (3) Push lever switch to "RES". Balance the bridge with the original ratio, and obtain reading R_3 (Fig 10)

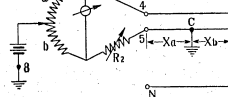


FIG 9

Resistance of X_a is

$$X_a = \frac{A}{A+1} (R_3 - R_2)$$

- (4) Let the length of the cable be L' , distance from 5 to C may be calculated as follows:

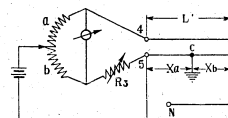


FIG 10

$$X = L' \frac{X_a}{X_a + X_b}$$

D. Open Location - Quaded Cable

This method requires external low frequency source (< 100 c/s) and headphone for open location of quaded cable.

- (1) Connect the open wire to post X_2 and a good wire of equal gauge and length in the same cable to X_1 , and strap them together at the distant end of the cable. Join the mates of these wires at both end. All wires must be free from grounds and crosses. Connect one terminal of source of A.C. to the -BA post and the other terminal to the near end of the joined mates. Set ratio plug at M1000, M100, or M10. Set lever switch at MUR. Depress keys-6 & 7 and balance bridge by varying the rheostat for silence or minimum tone in headphone. (Fig. 12)

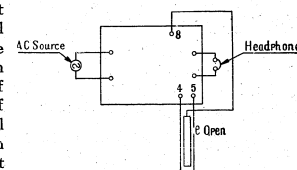


FIG 11

If the length of the cable is L' , then distance from 5 to open location C may be calculated as follows:

$$X = \frac{2L'M}{M+R}$$

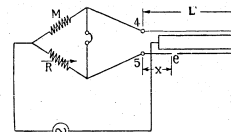


FIG 12

E. Open Location - Pairs

- (1) Connect low frequency source (< 100 c/s) to the posts for external source. Set the lever switch to MUR. Connect the open wire to X_1 and ground its distant end. Ground the near end of its mate with distant end open. Connect X_2 to one terminal of a condenser with the other terminal grounded. Arrange bridge as in preceding description, but ground outer terminal of source, Balance the bridge and obtain reading R_1 (Fig 13)

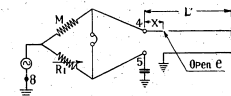


FIG 13

- (2) Disconnect near end of faulty wire from X_1 and ground it. Disconnect

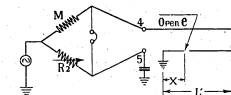


FIG 14

near end of good wire from ground and connect it to X_1 . Balance the bridge and note reading as R_2 (Fig. 14)

- (3) If the length of the cable is L , then length X may be calculated as follows:

$$X = \frac{L R_1}{R_2}$$

IV BATTERY MAINTAINANCE

To install battery, remove the aluminum plate at the left side of the case, and insert the cells. Change battery at least once every six months. (Fig15)

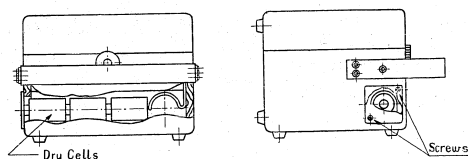


FIG 15

V CAUTION

- (1) For measuring resistance containing inductance, key 7 should be released. Depress key 6 and then key 7.
- (2) Release key 3 when using external gal. The pointer of the gal. in the instrument should be locked.
- (3) Release key 2 for external battery.
- (4) Lock the pointer of galvanometer when not in use.
- (5) The instrument should be placed horizontally when measuring.
- (6) Battery should be changed periodically to avoid damage to the instrument.
- (7) Excessive vibration should be avoided.
- (8) The instrument should be kept in a cool dry place. Keep the panel to ensure good insulation.

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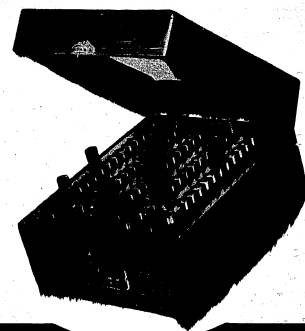
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Bank of China Building 11/12 floor, Hongkong
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**PRECISION
WHEATSTONE
BRIDGE**

TYPE 103



中國儀器進口公司

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION

BRANCHES & AGENTS

I APPLICATION

Type 103 Precision Wheatstone Bridge is intended for direct current resistance measurements of the highest precision in laboratory. The measuring range is from 10^{-5} to 10^8 ohms, readable to five digits.

Two binding posts are installed on the panel from the measuring arm so that it can be used as an individual five decade plug type resistance box.

II CONSTRUCTION

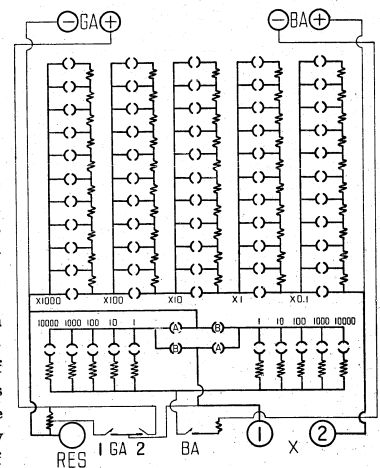
Type 103 Precision Wheatstone Bridge consists of two parts, the measuring arm and the ratio arms. Fig. 1)

1. The Measuring Arm

The measuring arm has five decades of ten resistors each, respectively, 0.1, 1, 10, 100, and 1,000 ohms; limit of error for 0.1-ohm resistors $\pm 0.1\%$, for all others $\pm 0.05\%$. The bridge blocks have five plugs which can be pressed firmly to ensure small contact resistance.

2. The Ratio Arm

Ratio arms have two each of 1, 10, 100, 1,000, 10,000-ohms resistors; limit of error in ratio resistors $\pm 0.02\%$. Changing of the ratio is obtained simply by changing the positions of the two plugs. Plugs for exchanging the positions of



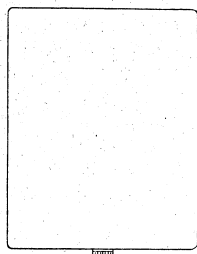
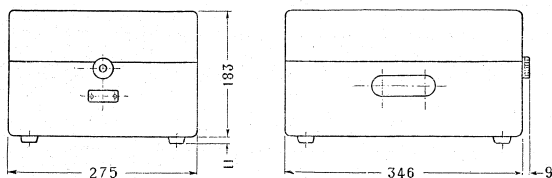
CIRCUIT DIAGRAM

of the ratio arms are also provided. For precise measurement, first measure one value with arms set at "A", then exchanging the position of the arms and measure again, the mean value will eliminate any possible error due to the contact and wiring resistance of the ratio arms.

3. A shunt is provided in the galvanometer circuit. When measuring, first press down key GA—1 and balance the bridge, then release GA—1, and press down key GA—2, the balanced value will be the desired value.
4. A 10—ohm resistor is installed in series with the battery circuit to protect the ratio and measuring arms from being damaged by over current.

III GENERAL CHARACTERISTICS

1. Ratio arms 2 (1+10+100+1000+10000) ohms, max. error $\pm 0.02\%$
2. Measuring arm 10 (0.1+1+10+100+1000) ohms, max. error $\pm 0.05\%$ for one ohm and higher, $\pm 0.1\%$ for lower than 1—ohm.
3. Measuring range 10^{-5} — 10^8 ohms.



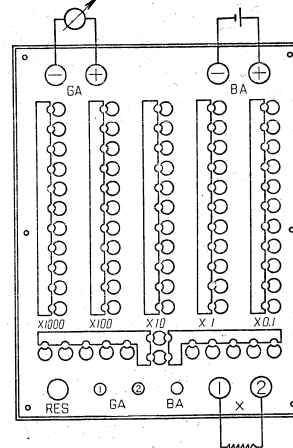
EXTERNAL VIEW

4. Maximum resistance of the measuring arm, 11,111 ohms.
5. Weight 9.8 kg
6. Dimension 355 × 275 × 194 mm (Fig. 2)

IV OPERATION

A. Resistance measurement

1. Connect as in Fig. 3



CONNECTING DIAGRAM

2. Estimate the unknown resistance and choose the corresponding ratio:

Unknown Res.	Ratio	Voltage	Unknown Res.	Ratio	Voltage
1	1/10000		10^3 — 10^4	1	8
1—10	1/1000	2	10^4 — 10^5	10	10
10—100	1/100	4	10^5 — 10^6	100	20
100—1000	1/10	6	10^6 — 10^7	1000	
			10^7 — 10^8	10000	

3. Set the plugs in the measuring arm to some appropriate value so as to make the unknown resistance equal to ratio X measuring value.
4. Balance the bridge by changing the plug position until the galvanometer does not deflect when GA key is depressed. Balance first with GA—1, then with GA—2. The unknown resistance equals to the measuring plug-setting multiplied by the ratio arm plug-setting.
5. For precise measurement, it is desirable to exchange the ratio arms in order to have a mean reading. For example, with arm choosing plugs in position "A" and ratio plugs right in 1000 and left in 100, we have a certain reading, then change the arm choosing plugs to position "B", and ratio plugs right in 100 and left in 1000, add the reading to the first reading and divide by two, we obtain the mean value.

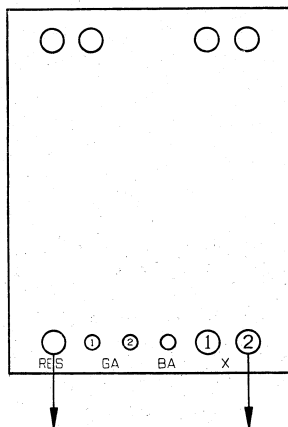
B. Used as a plug type resistance box.

1. Connect to the posts "RES" and "X2" as shown in the diagram.
2. Set the plugs in the desired position, for example 1643 ohms, we have the plugs in hole No. 1 of the thousandth decade, No. 6 of the hundredth decade, No. 4 of the tenth decade and No. 3 of the unit decade. The plug in the final decade being put in 0 position. The resulting resistance will be 1643.0 ohms.

Note: The maximum rated power for each coil is $\frac{1}{2}$ watt.

C. Auxiliary Equipment required and should be purchased separately.

1. Power source of 2—20 volts (Battery or rectifier)
2. Reflecting galvanometer with sensitivity not lower than 100 mm/microamp.



V PACKING

The cartoon contains the following apparatus and accessories:

- | | |
|---|---|
| 1. Type 103 Precision Wheatstone Bridge | 1 |
| 2. Brass Plugs | 9 |
| 3. Instruction Manual | 1 |
| 4. Certificate | 1 |

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**A.C. SINGLE PHASE^{STAT}
WATTHOUR METER**



中國儀器進口公司

**CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)**

A. C. SINGLE PHASE WATTHOUR METER

The S-1 model watthour meter is a single two-wire meter of our latest design. With skilled experience and improvement the S-1 model is constructed in a beautiful totally enclosed case, so as to prevent moisture and dust from entering into the inner parts and to assure a long service.

1. USES:— The S-1 model is a single phase two-wire induction type for measuring A.C. current 50 cycles and gives accurate reading of KILOWATT HOUR in accordance with consumption and period of time in operation.

2. CONSTRUCTION:— S-1 watthour meter weighs about $1\frac{1}{2}$ kg. Back plate and front casing are made of sheet steel with a piece of glass fitted in the cover to make the movement of the revolving disc visible. All the parts and accessories are mounted on the inside frame. Electro-magnetic parts, including potential coil, current coil, temperature compensating coil, overload compensator, 90° lagging coil, 90° adjuster and light load adjuster, are made from silicon steel laminations and are fitted on the left side of the frame. The 90° adjuster is of resistance wire connected to the temperature compensation coil for adjusting the phase position of the magnetic flux produced by the current coil. The light load adjuster is a screw rod, which can be turned at both left and right ends for adjusting the speed of the revolving disc at light loads. The revolving parts are fitted on the axle at the front in the middle with the disc extended to the gap of the electro-magnet and permanent magnet. The disc will be rotated by current induced from the current in potential coil and current coil. The permanent magnet is fitted on the mounting frame at the middle of the right part. Its magnetic flux, passing through the disc, creates blocking effect enabling the speed of the revolving disc in direct proportion to the current and voltage of the load. By the side of the permanent magnet, there is a full load adjusting screw to shift the position of the permanent magnet, so to vary the magnetic force, and the speed of the revolving disc at full load can be adjusted accordingly. These features render adjustment easier than that

for meters of other types. On the top of the mounting frame, there is the registering mechanism, the gear wheel of which meshes that of the wheel on the disc axle, the readings of kilowatt-hour consumed can thus be obtained from the cyclo dials with 5 figures. Terminal box is below the casing with four openings. Upper bearing of the axle is of needle sleeve type, while the bottom bearing of the axle is of steel ball and jewel with spring to reduce the wear and increase the sensitivity. The revolving disc has a diameter of 90 mm and weighs 18.8 grams.

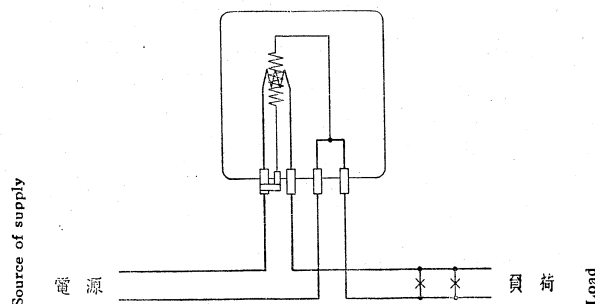
3. RATINGS:—

VOLTAGE AND CURRENT RATINGS

Rated Voltage	Rated Current (Amp.)												
110 v.	$1\frac{1}{2}$	$2\frac{1}{2}$	3	5	10	15	20	25	30	40	50	75	100
220 v.	$1\frac{1}{2}$	$2\frac{1}{2}$	3	5	10	15	20	25	30	40	50	75	100

Current transformer will be supplied for current over 100 Amp.

4. DIAGRAM OF CONNECTION:—



5. CHARACTERISTICS:—

1. ACCURACY:

Table (I)

Rated current	Power factor	Permissible error
10 - 125%	1	$\pm 2\%$
5%	1	$\pm 3\%$
10 - 125%	0.5 (lagging)	$\pm 2\%$
10%	0.5 (lagging)	$\pm 3.5\%$

2.

Table (II)

Rated current	Power factor	Permissible error
10 - 125%	1	$\pm 2\%$
10 - 125%	0.5 (lagging)	$\pm 3\%$

3. STARTING CURRENT:— 0.5% — 1% of rated current.
4. CRAWLING:— There is no distinct movement even though the voltage is increased by 110%, and if there is any, it will not exceed one revolution.
5. EFFECT OF VOLTAGE:— The permissible error will not exceed 1% when the applied voltage is 10% over or under the rated voltage.
6. EFFECT OF TEMPERATURE:— When temperature is varied between 0°C and 40°C, the permissible error will not exceed $\pm 2\%$ at unity power factor and $\pm 3\%$ at power factor of 0.5 lagging.
7. INSULATION:— The insulating resistance is 100 megohms between coil and steel case.
8. POTENTIAL TEST:— The meter can stand a potential test at 2000 volts A.C. 50 cycles for a duration of one minute.

9. POWER LOSS:— 2.4 VA for voltage coil.

10. FULL LOAD SPEED:— 22 revolutions per minute.

6. ADJUSTMENT:— Every meter is properly and carefully tested and calibrated before leaving factory. If re-calibration is required due to long use and damage the following adjustment can be made in accordance with the permissible error mentioned above.

1. FULL LOAD ADJUSTMENT:— Connect a load of 100% rated current at unity power factor, and adjust the position of the permanent magnet with the screw at its side by checking with a standard meter.
2. 90° ADJUSTMENT:— Connect a load of 100% rated current at 0.5 power factor and adjust the length of the resistance coil by checking with a standard meter.
3. LIGHT LOAD ADJUSTMENT:— Connect a load of 10% rated current at unity power factor and adjust the revolving rod either to left or right by checking with a standard meter.
7. INSTALLATION:— If the cover of the meter has been opened before installation, it is necessary to clear off all dust from the interior and then close tightly and seal the meter. The meter should be installed at a place where ventilation, temperature and humidity is most suitable.

METHOD OF INSTALLATION:

1. After hanging the meter on the meter board, the cover of the terminal box is removed. The meter is secured to the board by two wood screws one for each lug hole at two sides of the terminal box. Care must be taken that the axis of the revolving disc be perpendicular to the ground level, otherwise accuracy will be effected owing to tilt of the disc.

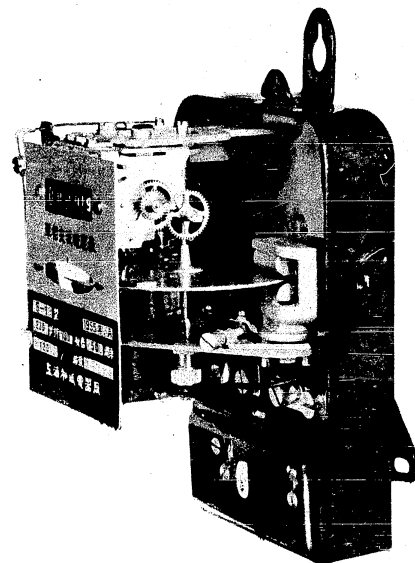
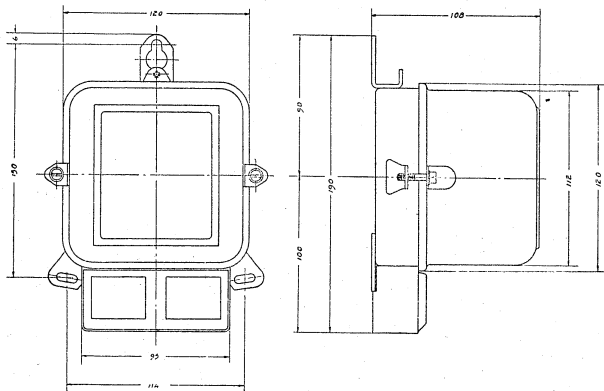
2. Power lines and load lines are to be connected in accordance with the diagram of connection. Observe whether the revolution of the disc is normal (left to right direction).

3. If the motion is in order, it is necessary to see whether there is any crawl after the load is disconnected.

4. If the crawling movement is within the limit allowed, then the load lines can be connected and have the cover of terminal box closed and sealed.

5. It is important that the load should be in accordance with the rated current of the meter. Any overload will cause a quick run of the revolving disc resulting in the rise of temperature in current coil which will endanger the meter or shorten its life.

8. OVERALL DIMENSIONS:—



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STAT



"Chungtien"
HEADPHONE

中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
IMPORTERS & EXPORTERS

CHUNGTIEN HEADPHONES

I MODELS:

2000 Ohm set. 3000 Ohm set. 4000 Ohm set.

II TECHNICAL DATA:

1. The D.C. resistance of the double headphone and turns of coils are as follows:

D. C. Resistance	Resistance of each coil	Turns of coil (Winding)	Wire Gauge
2000	500	3600 turns	SWG No. 46
3000	750	3780 turns	SWG No. 47
4000	1000	5500 turns	SWG No. 47

Note: The above figures are allowed a tolerance limit of 10%.

2. The insulation resistance between the coils and cores and between the cores and bakelite receiver pieces is over 20 Megohms.

3. Permanent magnetic alloy is made of ALNI III magnet alloy.

4. Test of sensitivity. Tone quality is clear and distinct; as a receiver for the crystal radio, its sensitivity is higher than average local product. For simply testing, put one terminal of cord in touch with tongue and let the other terminal of the cord contact slightly with the wrist watch, a clear click will be heard from the receiver.

5. The iron cores are made of magnet iron and properly annealed.

6. The diaphragm is made of 0.17 mm. iron plate also properly annealed.

7. The enamelled copper wire is alloyed less than 10 pin holes per meter.

III This double headphone (or crystal radio headreceiver) is generally accepted by the users for its high sensitivity and easy handling. For maintaining quality, the following vital parts have been specially treated in the course of manufacturing.

1. The diaphragm of the receiver attained high sensitivity by annealing.

2. The raw material for cores is special magnet iron and the annealing process renders the magnetic residual to a minimum.

3. No casting gate is allowed for reproducing the magnetic alloy. The magnetic power is excellent. The rate of degaussing is negligible.

4. The gap between the core and the diaphragm is standardized by precisely processing; the hearing quality is guaranteed.

IV PRECAUTIONS:

1. To prevent the thin copper wire of the coil from oxidation, always keep the phone in a dry place.

2. Do not remove the diaphragms constantly, it effects degaussing.

3. Keep the diaphragm in perfect flatness. Any bending of it brings about defect in sounding quality.

4. Do not connect this phone with a D.C. circuit. A connection regardless of the direction of the current may reduce the magnetic power.

V USES:

This headphone is designed for the crystal radio receiver which is widely adopted in rural areas where electricity is not available. It is also used as a substitution for wire speaker in hospitals and sanitariums where quietness is desired.

This headphone is also available for measuring instruments, wire communications, telegraph coding and other purposes.

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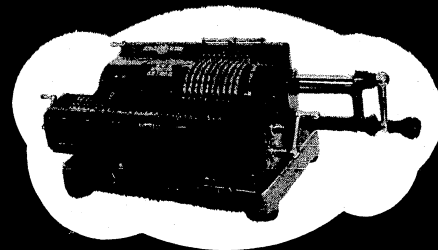
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AGENT:—

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“Culture”



CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

"CULTURE" Calculating Machine

Widely employed and well reputed in Commercial, Industrial, Educational and Scientific Circles.

Capacity: $10 \times 10 \times 20$

1. Dependable and Easy operating.
2. Machine parts heat-treated withstanding friction, Chrome-plated and rust proof.
3. Speed: 300 cycles per minute.

Overall:		Packing:
Length:	36 cm.	49 cm.
Width:	19 cm.	30.5 cm.
Height:	13.5 cm.	30 cm.
Nett Wt.	8 kgs.	Gr. Wt. 17 kgs.

文化牌 20 位計算機

商業工業教育界科學界廣為使用並久享盛譽

數字輪 $10 \times 10 \times 20$

1. 準確可靠使用方便
2. 機件經熱處理可耐磨損光亮鍍鉻不易生銹
3. 速度： 每分鐘 300 轉

機 身		包 裝	
機 長	36 公分	長	49 公分
機 寬	19 公分	寬	30.5 公分
機 高	13.5 公分	高	30 公分
淨 重	8 公斤	毛 重	17 公斤

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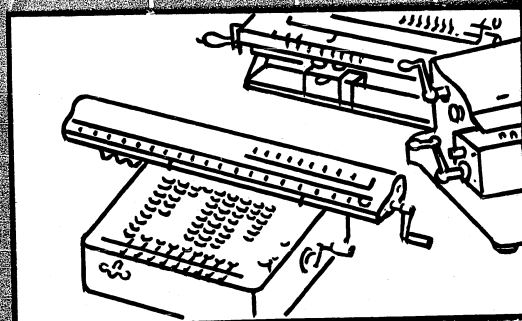
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**OUR HAND OPERATED
CALCULATING MACHINES
WILL GIVE YOU ALL ANSWERS**



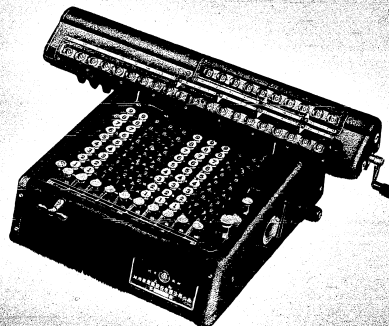
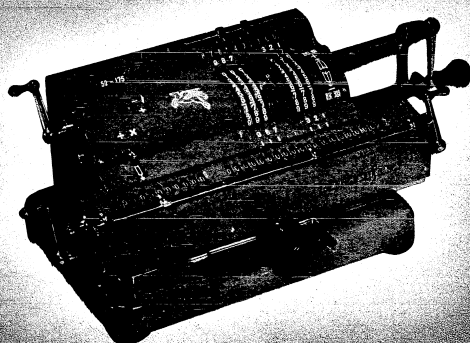
中國儀器進口公司

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
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"FLYING HORSE"

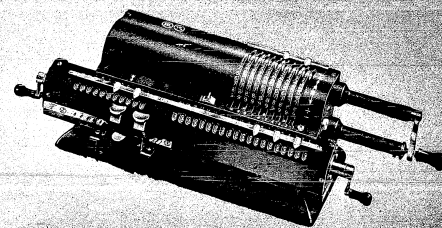
Calculating Machine Capacity: $10 \times 10 \times 20$

Our "Fly-Horse" calculator is of high efficiency and durable dependability but offered at very low price. Each machine, while reflecting our expert engineering and skill workmanship, is subjected to rigid test and inspection before leaving factory, therefore ensures complete satisfaction.



"TUNG YUNG" Calculating Machine Capacity: $10 \times 10 \times 20$

"Tung Yung" calculating machine is one of the best high speed hand model calculating machine with full keyboard, easy use, four fundamental calculations, namely: Addition, Subtraction, Multiplication, Division. Besides, it is quite fit for making rapidly several special calculations like: extraction of square roots, elevation to powers of various exponents, cubatures, discounts, calculations with complex numeral or metrical systems etc.



"TWIN WHEEL" Calculating Machine

Capacity:
Large register 20 dials
Small register 11 dials
Setting board 10 levers

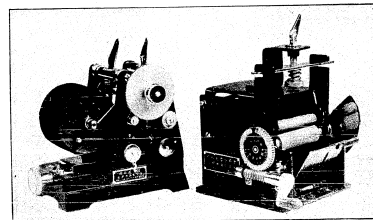
Adding, multiplying, subtracting and dividing crank type calculating machine. Fast, smooth and easy operation. Handy and light but sturdy efficient machine. Characteristic for this model is its great capacity which is sufficient even for the largest calculating operations that may have to be dealt with.



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STAT

*Cotton Drawing Apparatus.
 Cotton Sorter.*



中國儀器進口公司
 CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
 (IMPORTERS & EXPORTERS)

HOW TO USE THE DRAWING APPARATUS:

1. Divide the Small Average Test Specimen Cotton into four equal parts.
2. Turn Screw (17) to adjust the distance or space between the two pairs of Rollers to obtain a space of about 3-5 m.m. in excess of the Length Standard under test.
3. Set on Levers (7) to tighten the two pairs of Rollers.
4. Feed the said four equal parts one after another separately into Cotton-feeding Rollers (1) (2); turn Handle (8) counter-clockwise.
5. Take away the foreign matter and neps from the Specimen Cotton on Velvet Roller (12).
6. Take off Specimen from Velvet Roller (12); pass it through the Drawing Apparatus for three to five times (not less than three times for cotton grade 3 and up—not less than five times for cotton grade 4 and down) and make it into four Slivers.
7. Part each of the four Slivers into two equal lengths, discarding one half of each and keeping the other four halves. Combine each two of the remaining four halves into one and pass them again through the Drawing Apparatus for a same number of times as aforesaid to produce two Slivers.

8. Cut each of the two Slivers into two equal halves, again discarding one half of each and keeping the other two halves. Combine the remaining two halves into one and pass it again through the Drawing Apparatus for a same number of times as aforesaid, thus producing the Test Specimen Sliver.
9. Select out, lengthwise, 0.1 to 0.12 gram from the Test Specimen Sliver. Manipulate the fibres carefully by fingers and cast off the dust and other impurities. Again, pass it through the Drawing Apparatus to produce the Ultimate Cotton Sliver.

Cotton Drawing Apparatus

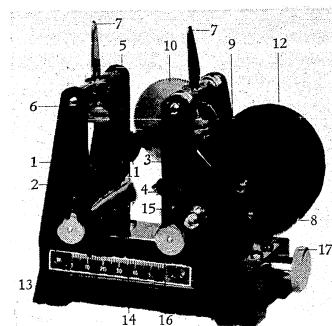
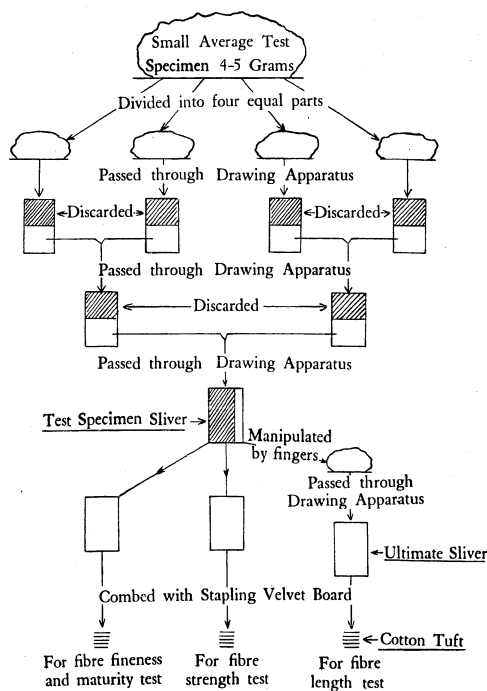


Diagram showing the Process of making Test Specimen Sliver, Ultimate Sliver and Cotton Tuft.



HOW TO USE THE COTTON SORTER:

Open the Lid (9) of Cotton Sorter. Set the pointer on the Revolvable Dial (4) at degree 9. Turn downward the wooden part hinged upon Stapling Velvet Board and, with the aid of Fibre Clip No. 1, carefully clip up the cotton tuft which has already been properly made and now placed on Stapling Velvet Board, then place it on the lower roller of Cotton Sorter. When placing the cotton tuft on the roller, the lower adjustable tip of Fibre Clip No. 1 should firmly and properly touch the edge of Sliding Plate (14), and the Clip should also rest upon Support (20) in such a position as to keep the cotton tuft in a horizontal position.

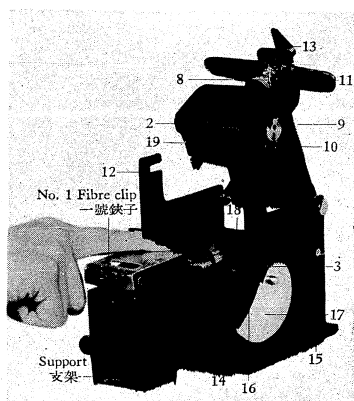
Now, put on the Lid (9) and tighten the Torsion Spring (8). Simultaneously, check the pressure of the Spring with a proper instrument to obtain a pressure of 7000 grams. After taking off the Clip, the even end of the cotton tuft should be closely in line with Sliding Plate (14); thus the exposed part of cotton tuft will be 9 m.m. in length. Now, turn down Sliding Plate (14) in order not to interfere with the work of clipping the short fibres. Then, turn Handle (6) counter-clockwise one round so that the Roller will deliver 1 m.m. of tuft. At this time, the part of the fibres free from the grip of Rollers, within 10 m.m. in length, will be the First Batch.

Draw out this First Batch of fibres with Fibre Clip No. 2 and place it on the Velvet Board to have it rolled into a small roll. Now, turn Handle (6) two rounds so that the Roller will deliver a further 2 m.m. of fibres. Draw out the fibres again with Fibre Clip No. 2 and roll them in like manner into a small roll on the Fibre Velvet Board.

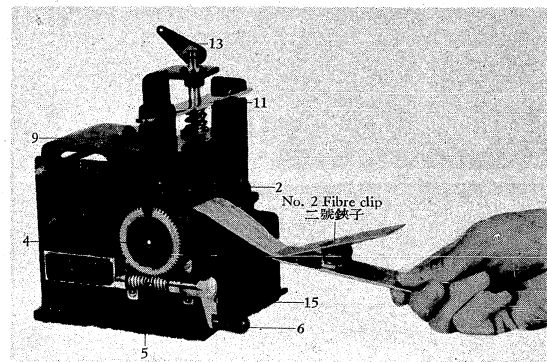
Every batch of fibres is then drawn in turn, until all the fibres are clipped up completely. Usually, the fibres are drawn twice for each batch of fibres. When the pointer is set on the Revolvable Dial at degree 16, the Sliding Plate must be lifted up to its original position. Thereafter, when drawing the fibres, the Clip must touch firmly the side close to the edge of the Sliding Plate.

Now the whole cotton tuft is clipped up completely and divided into many batches of fibres. The result is that the lengths of each two neighboring batches are 2 m.m. in difference. Then weigh all batches of fibres separately on a Torsion Balance up to an accuracy of 0.1 milligram to obtain the accurate weight of each batch.

Cotton Sorter—Front View



Cotton Sorter—Side View



Specifications of Drawing Apparatus and Cotton Sorter :—

- | | Drawing Apparatus | Cotton Sorter |
|---|-------------------|---------------|
| 1. Length: | 155 cm. | 150 cm. |
| Width: | 150 cm. | 120 cm. |
| Height: | 160 cm. | 190 cm. |
| Weight: | 2.3 kg. | 2 kg. |
| 2. Shipping Weight of Drawing Apparatus and Cotton Sorter, including Accessories and Wooden Case: | | 8.3 kg. |
| 3. Hand-operated type. | | |

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BOOKLET S1006

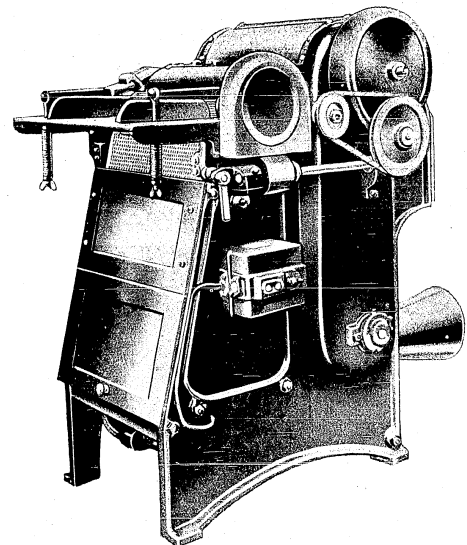
TEXTILE
TESTING
INSTRUMENTS

STAT

EXPORTED BY:

中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

SHIRLEY ANALYSER



Application:-

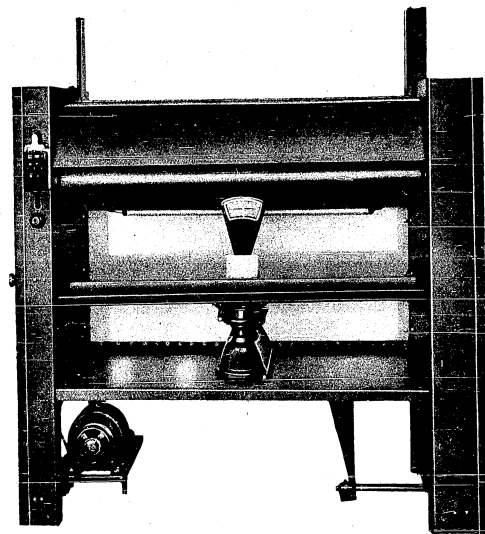
1. To ascertain percentages of clean cotton and trash of raw cotton or waste.

2. To furnish accurate idea of capability of existing machinery on any particular class or mark of cotton or waste.
3. To determine state of cleanliness of product at any stage in opening, scutching, and carding processes.
4. To ascertain quantity of fibre suitable to be spun in waste discharged by various machines.
5. To determine loss of good fibre in the sequence of opening and scutching.

Overall Dimension

Length 45 inches.
Width 40 inches.
Height 49½ inches.
Weight..... 1433 lbs.

MOTOR DRIVEN LAP METER



Specification:-

1. Testing length - 1 yard.
2. Working width - 40" (45").
3. 1-yard Automatic Stop Motion and Lap Cut-off Device.
4. Attached 1 set 0-26.75 oz. special weighing scale.

5. Wooden roller speed - 2 rpm.
6. Attached one $\frac{1}{4}$ H.P., 380 V, 3-phase motor and one switch.
7. One 220 V fluorescent lamp and one switch.

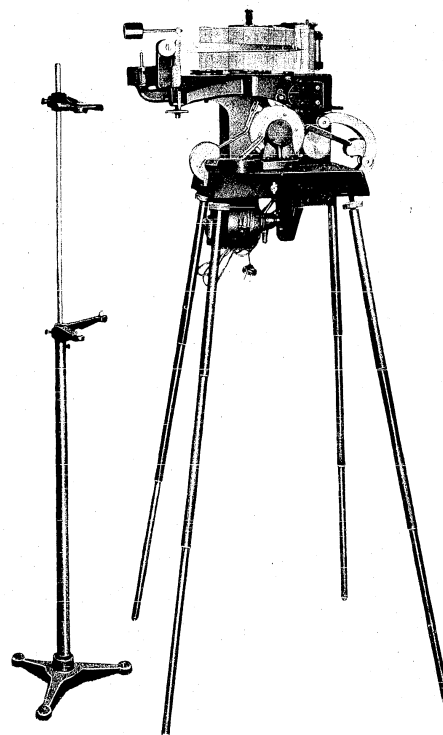
Direction:

Place lap on iron supporter, start motor and switch on fluorescent lamp, feed lap between wooden roller and $\phi 1\frac{1}{4}$ " roller, and step on the treadle to enable the carrier wheel to engage with the gear on the shaft end of the wooden roller. Having been calendered by the two pairs of rollers, the lap hangs down and its evenness is clearly visible as it passes in front of the light of the fluorescent lamp. As soon as the wooden roller completes one revolution (circumference of which being one yard), the pin of the wooden roller gear pushes away the carrier wheel and so the wooden roller stops. By this time, the lap is cut off by the two pairs of rollers and drops onto the balance dish where it is weighed. Uniformity of weight of every yard is thus ascertained. If yardage is found incorrect, position of $\phi 1\frac{1}{4}$ " roller is to be adjusted.

Overall Dimension

Length	52.4 inches.
Width	26.4 inches.
Height	64 inches.
Weight	1322.5 lbs.

ROVING & SLIVER TESTER (Motor Driven)

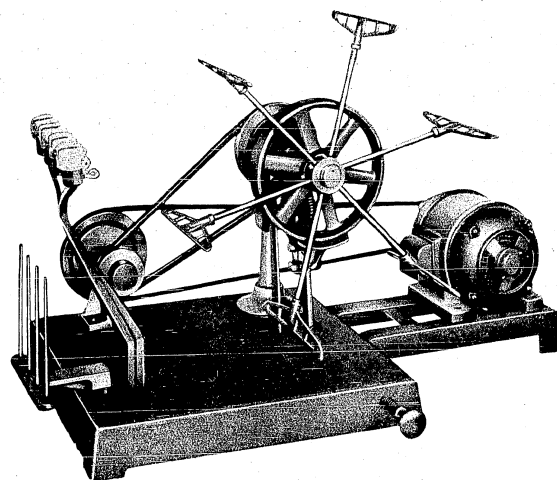


Specification:-

1. Suitable for testing evenness of roving and sliver.
2. Equipped with one 3-phase, 380 or 220 V, 1/8 H.P., 50-cycle, 1420 rpm motor.
3. Attached 6 rolls recording paper and 1 pen.
4. 1 roving stand.
5. Weights: 2½ lbs, for roving, add 1½ lbs. for sliver.
6. Trumpet: For roving 1/16" × 1/2", for sliver 3/32" × 1/2".
7. Forged steel rollers.
8. Space between large and small rollers is detectable under torch light.
9. Space occupied - 66 × 71 cm.
10. Height - 140 cm.
11. Packing measurement - 64cm × 43cm × 79cm.
12. Gross weight - 86 kgs.
13. Suitable for cotton textile mills.
14. English system.
15. Polished and lacquered in grey.

Overall Dimension

Length	26.4 inches.
Width	28.5 inches.
Height	56 inches.
Weight	189.6 lbs.

MOTOR DRIVEN WRAP REEL**Specification:-**

1. Swift circumference - 1½ yards (or 1 metre for that of metric system).
2. Distance between spindles 2", 4 spindles.
3. Thread guide - ¼" - 1½".
4. Automatic stop motion.

5. Swift speed - 160 rpm.

6. Equipped with one $\frac{1}{4}$ H.P., 220/380 V, 3-phase motor.
1420 rpm.

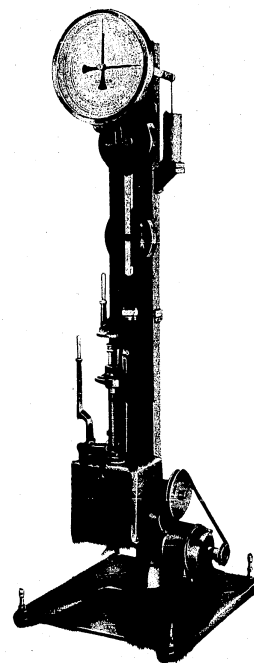
Direction:

Put bobbins on spindles. Yarn is conducted through thread guide and porcelin cup and is eventually fixed to the hook of one of the brass blades on swift arms. Push knob, traverse rope pulley will connect with swift by means of clutch, and worm on shaft end of swift then drives yardage wheel and swift guide cam. When swift reaches its 80th revolution (100th revolution for the metric system), pin on yardage wheel pushes off the brake hook, enabling clutch to get loosened and the spring to pull the brake lever, and thus the swift is braked. Break yarn at the hook of brass blade marked with colour and remove leas off swift individually.

Overall Dimension

Length	20 inches.
Width	20 inches.
Height	35 inches.
Weight	123.5 lbs.

LEA YARN STRENGTH TESTER (Hydraulic Type)



Specification:-

1. System-metric or English.
2. Strength range:-

Metric system:	Inner graduation - 0 - 100 kgs.
	Outer graduation - 0 - 200 kgs.

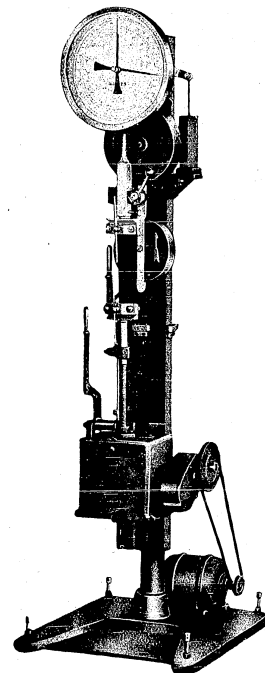
English system: Inner graduation - 0 - 150 lbs.
Outer graduation - 0 - 300 lbs.

3. Descending speed - 60 cm/min.
4. Swift - 100 cm.
5. Max. descending distance of clamp - 165 cm.
6. Clamp-made of cast iron.
7. Tolerance:-
Inner graduation: 0 - 25 kgs $\pm \frac{1}{4}$ kg, 25 - 65 kgs $\pm \frac{1}{2}$ kg,
65 - 100 kgs $\pm \frac{1}{4}$ kg.
Outer graduation: 0 - 50 kgs $\pm \frac{1}{4}$ kg, 50 - 130 kgs $\pm \frac{1}{2}$ kg,
130 - 200 kgs $\pm \frac{1}{4}$ kg.
8. Levelling position-on sides and rear of U iron.
9. Attached one 3-phase, 380 or 220 V, 50 cycle, 1420
Revolution 0.3 Amp. motor.
10. Attached one V belt.
11. Rotational direction-per direction of arrow on rope pulley.
12. Space occupied - 61cm \times 71cm.
13. Height - 190 cm.
14. Switch-not included.
15. Packing-wooden case, 208cm \times 76cm \times 81cm.
16. Polished and lacquered in grey.
17. Gross weight - 254 kgs.

Overall Dimension

Length 24.4 inches.
Width 28.4 inches.
Height 76 inches.
Weight 560 lbs.

CLOTH STRENGTH TESTER (Hydraulic Type)



Specification:-

1. System-metric or English.
2. Strength range:-
Metric system: Inner graduation - 0 - 100 kgs.
Outer graduation - 0 - 200 kgs.

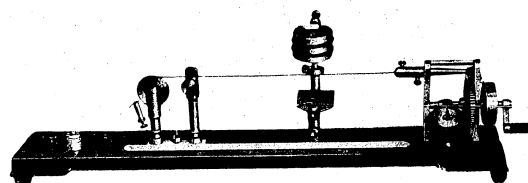
English system: Inner graduation - 0 - 150 lbs.
Outer graduation - 0 - 300 lbs.

3. Descending speed - 10 cm/min.
4. Test cloth width - 5 cm.
5. Distance between clamps - 20 cm.
6. Max. descending distance of clamp - 13 cm.
7. Clamp-made of cast iron.
8. Tolerance:-
Inner graduation: 0 - 25 kgs $\pm \frac{1}{4}$ kg, 25 - 65 kgs $\pm \frac{1}{4}$ kg,
65 - 100 kgs $\pm \frac{1}{4}$ kg.
Outer graduation: 0 - 50 kgs $\pm \frac{1}{4}$ kg, 50 - 130 kgs $\pm \frac{1}{4}$ kg,
130 - 200 kgs $\pm \frac{1}{4}$ kg.
9. Levelling position-at sides and rear of U iron.
10. Attached one 3-phase, 380 or 220 V, 50 cycle, 1420 rpm, 0.3 Amp. motor.
11. Attached one V belt.
12. Rotational direction-per direction of arrow on rope pulley.
13. Space occupied - 61cm \times 71cm.
14. Height - 190 cm.
15. Switch-not included.
16. Packing-wooden case, 208cm \times 76cm \times 81cm.
17. Polished and lacquered in grey.
18. Gross weight - 254 kgs.

Overall Dimension

Length 24.4 inches.
Width 28.4 inches.
Height 76 inches.
Weight 560 lbs.

TWIST TESTER



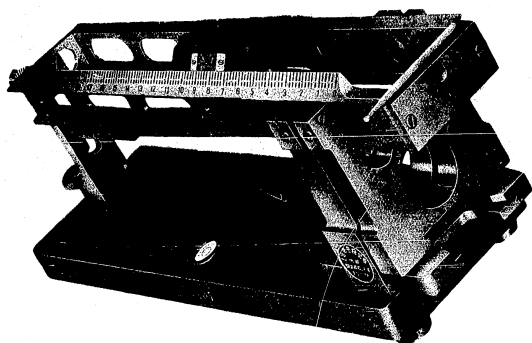
This apparatus is used for determining the twist of cotton, woolen, silk and linen yarns of specific length, fitted with magnifying glass and black and white reflecting plates for showing condition of the yarn while untwisting.

Test length 0 - 30 cm.
Twist dial 0 - 500 revolutions (for left and right twists).
Tension weights 5-50 grammes (5 pcs.).
Accuracy 0.01 twist.

Overall Dimension

Length 24.7 inches.
Width 6.5 inches.
Height 7.2 inches.
Weight 14.35 lbs.

COTTON FIBRE TENSILE STRENGTH TESTER



This tester is used to determine the tensile strength of a tuft of cotton fibre. Its construction is similar to that of a weighing scale. Being fitted with steel balls, the weight slides easily along the steel rail of the scale lever. When the fibres break, the weight slides to the left and stops on the inclined lever. The point on the scale where the weight stops, indicates the break strength of the fibres.

Capacity Break strength 10 - 15 lbs.
Testing length 0.464 inch
Accuracy01 lb

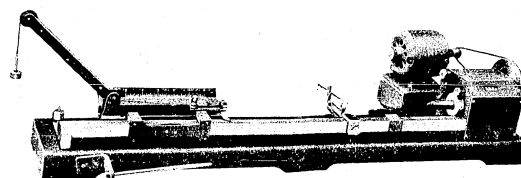
Overall dimension:-

Length	15 inches
Width	3.95 inches
Height	6.00 inches
Size of wooden case	L. 19 x W. 7.15 x H. 8.35 inches
Packing measurement	L. 20 x W. 9.2 x H. 10 inches
Net weight	11 lbs
Gross weight	20 lbs

Accessories:-

- 2 - Fibre clamps
- 1 - Sorting device
- 1 - Steel needle comb
- 1 - Socket
- 1 - Knife
- 2 - Black plush boards.

MOTOR DRIVEN TENSION FEELER TYPE TWIST COUNTER



This apparatus is adapted to variable testing lengths of 0 - 20 inches. It is provided with a small electric motor and a counter showing from 0 - 9999 turns for left and right. It facilitates the determination of the number of turns of single yarns by opening and twisting again the thread in the opposite direction until the original number of turns is reached as indicated by a small and sensitive tension feeler. Divide the indication of the counter by 2, and the quotient is the number of turns of the tested thread.

Overall dimension (L x W x H) 37" x 14" x 9 1/4"

Net weight 36 1/2 lbs.

Boxed for export 38" x 7 1/2" x 10"

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MICROSCOPES

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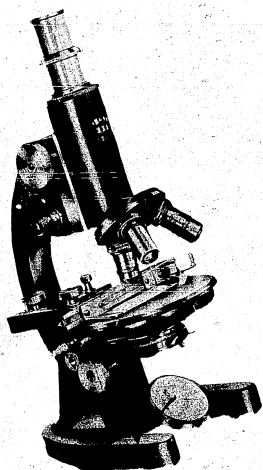


CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
SHANGHAI BRANCH
IMPORTERS & EXPORTERS

MODEL "05" BIOLOGICAL MICROSCOPE

A ruggedly constructed instrument designed for general work in the laboratories of educational and research institutes, hospitals, clinics and industries.

This Model "05" Biological Microscope has the following mechanical features:



Body: Vertical, monocular.
Tube length: 170 mm.

Stage: Round, 115 mm in diameter, with detachable mechanical stage fitted directly into the stage clip holes.

Substage: Rack and pinion with Abbe Condenser Iris diaphragm.

Focusing Adjustment: Standard rack and pinion coarse adjustment. Standard side lever type fine adjustment, 0.01 mm.

Nose Piece: Revolving, dust-proof, centered and parfocalized.

Finish: In rich, lustrous black. Exposed metal parts are chromium plated.

Optical Equipment:

Huygenian Eyepieces:	Achromatic Objectives:	Condenser:
5x 10x 15x	8x 0.25 N.A. 45x 0.63 N.A. 100x 1.32 N.A. (Oil immersion)	Abbe Condenser: 1.30 N.A.

Accessories:

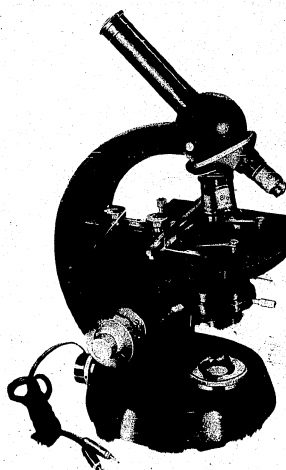
Spanner	1 piece	Cedar Wood Oil	1 bottle
Stage Spring Clips	1 pair	Filter Glass	1 piece

Packed in a handsome hardwood case of 200 x 240 x 360 mm.
Gross weight: 9.20 kgs. 上海儀器廠製造

Model "08" RESEARCH MICROSCOPE.

Best suited for research institutes, clinics, hospitals and universities.

This Model "08" Research Microscope has the following mechanical features:



Body: Inclined Monocular, inclination 45°, tube length 160 mm.

Stage: Fixed round mechanical stage.

Substage: Rack and pinion with Condenser (N.A. 1.30). Iris diaphragm.

Focusing Adjustment: Coarse adjustment by means of rack and pinion. Fine adjustment by means of ball-bearing device, 0.002 mm graduation.

Nose-piece: Revolving, quadruple.

Objectives: 8x, 45x and 100x (oil immersion), equipped with built-in spring device to avoid damage that may otherwise occur to objectives and microscopic slides or specimens when contacting inadvertently.

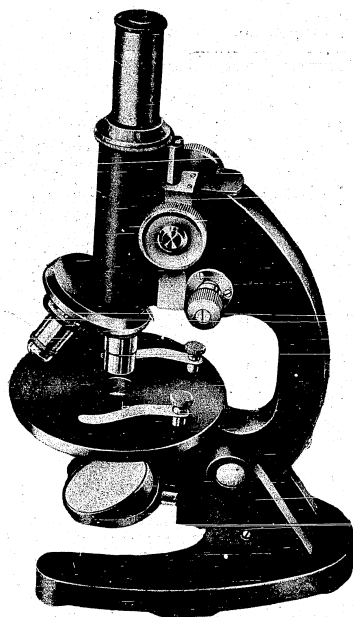
Illumination: Built-in Electric illuminating device.

Optical Equipment:

Achromatic Objectives:		Huygens Eye-Pieces:	Total Magnification.
Dry:	Oil Immersion:		
8x 45x	100x (N.A. 1.32)	5x, 10x, 15x.	40x — 1500x.

Packed in handsome varnished cabinet.

Gross Weight: 13.5 kgs.



Model "01"
BIOLOGICAL MICROSCOPE

Best suited for school experiment and laboratory purpose.

Model "01" Biological Microscope has the following mechanical features:

Body: Vertical, monocular. Tube length 170 mm.

Stage: Round 120 in diameter, with revolvable quintuple diaphragm.

Focusing Adjustment: Coarse and fine adjustments.

Nose-piece: Revolving, triple.

Optical Equipment:

Achromatic Objectives	Huygens Eye-pieces	Total Magnification
8x, 45x	5x, 10x, 15x	40x - 675x

Packed in handsome varnished cabinet.

Gross weight: 5 Kgs.

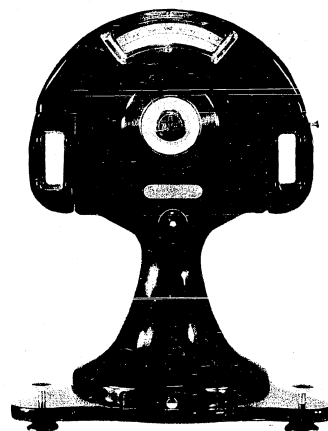
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TORSION BALANCE

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中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS - 6X2-021284)

TORSION BALANCE

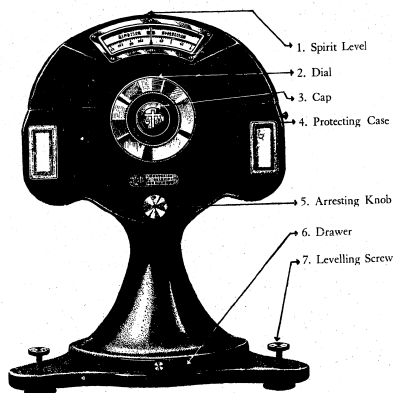
Model TW-TB

SPECIAL FEATURES:

- Highest accuracy, sensitivity and reliability.
- No bearing friction.
- With clear and readable scale.
- Anti-parallax reading.
- Rapid weighing.
- Convenient adjustment.
- Insensitive to external influences of magnetic forces.

The Torsion Balance is supplied in the following capacities:

Measuring Range in mgm.	Each division in mgm.	Reading in mgm.	Cat. No.
0-5	0.01	0.005	STW 1001
0-10	0.025	0.01	STW 1002
0-25	0.05	0.025	STW 1003
0-50	0.1	0.05	STW 1004
0-100	0.25	0.1	STW 1005
0-250	0.5	0.25	STW 1006
0-500	1.0	0.5	STW 1007
0-1000	2.0	1.0	STW 1008



Torsion Balance Model TW-TB

METHOD OF OPERATION

INSTRUCTION FOR SETTING UP:

- Put the balance in a definite firm place where the weighing is done.
- Level the balance by adjusting the leveling screw (7) until the bubble in the spirit level (1) is centered.
- Open the protecting case (4) and cautiously hook up the weighing pan. Then close the case.
- Set the zero point of the dial on the hair line by turning the dial (2). Turn the arresting knob (5) to the left for about 90° to release the balance and check if the hair line, the pointer and the reflection of the pointer in the mirror all fall in a line. When this is so, arrest the balance by means of turning the arresting knob to the right for about 90°.

Should the hair line, the pointer and the reflection of the pointer in the mirror do not fall in one line at this stage, open the cap (3) and, by using the supplied screw driver, the adjustment is made by turning the screw, which is located under the cap (3), to the right if the pointer falls off to the left of the hair line, or vice versa, until the pointer is in the proper position.

- Open the protecting case and place the check weight on the weighing pan by means of the supplied tweezers, then close the protecting case again. Set the full mark of the scale on the hair line, then release the balance by turning the arrester to the left to check if the hair line, the pointer and the reflection of the pointer in the mirror all fall again in one line.
- Arrest the balance again by turning the arresting knob to the right. Open the protecting case and take away the check weight from the weighing pan. Finally, set the zero point of the dial on the hair line.

NOW, THE BALANCE IS READY FOR USE.

WHEN IN USE:

1. Cautiously place the weighing material on the weighing pan and close the protecting case to shield the hook and the sample from draught. First turn the arresting knob to the left to release the balance, then turn the dial until the pointer falls in line with the hair line and the reflection of the pointer in the mirror, whereby the accurate weight is directly indicated in the scale by the pointer, and the weighing is completed.

Standard Equipment: (kept in drawer)

- 1 screw driver.
- 1 pair of tweezers.
- 1 checking weight for the capacity of the balance.

FIELDS OF USES FOR THE TORSION BALANCE:

The Torsion Balance is widely used in Research Laboratories, Educational Institutes and different lines of industries. It serves:

1. To check the weight-alterations due to evaporation and incineration processes.
2. To examine seeds of all kinds.
3. To investigate raw fibres, yarn and fabric samples, raw materials and finished products.
4. To determine the hygroscopy and moisture contents.
5. To determine the weight of:
 - paper samples, medicine powder, tablets, pills, incandecent filaments, etc.

Dimensions of carrying case 32.5 × 24 × 40.5 cm.
Gross Weight (including carrying case) 8 kg.
Net Weight 5 kg.

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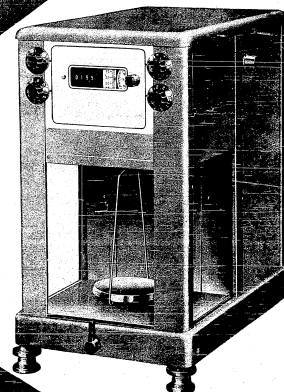
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ANALYTICAL BALANCES

OF ACCURACY & STABILITY



中國儀器進出口公司
NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

Analytical Balances

Representative products of our
modern industries, enjoying wide
admiration for their high sensitivity
& durability

Exported by:

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

SINGLE-PAN PROJECTION READING ANALYTICAL BALANCE

Latest scientific researches have enabled us to offer to the public an entirely new model of analytical balance, the construction of which is made possible by the employment of a principle vastly different from that hitherto used. Instead of the conventional 3 knife edges and 2 pans, the new balance has only 2 fine agate knife edges and 1 pan. Its weights are loaded on a support suspended to one end of the beam with a counter weight fixed to the other end. These weights can be readily detached from or reloaded onto the support by means of remote control knobs constructed outside the case enclosing the balance. Weighing is done by simple manipulation of the knobs by detaching the equivalent weights from the support and with the help of the electric projected vernier, the accuracy of reading therefrom can reach 0.05 mg. The result of the weighing can be easily readable from the optical scale specially provided for this purpose. The capacity of this balance is 100 grams.

The balance is equipped with a built-in transformer adaptable to 110v, 130v, 160v, 220v A.C. and is enclosed in a sturdy aluminium alloy case protected with anti-oxidizing laquer, with glass sliding doors and an overall size of 440×410×270 mm, weighing about 17.5 kilograms.

ADVANTAGES:

1. Accuracy:

- a. All weights are fixed inside the balance and handled with ease by control knobs outside the case. They are chrome plated to resist corrosion and thus unalterable.
- b. Constant loading on the beam eliminates bending errors and ensures uniform sensitivity up to the maximum loading.
- c. The optical reading range is 115 milligrams. All weighing under 100 milligrams is absolutely accurate.
- d. The weighing indicator scale is fixed on the front control panel.

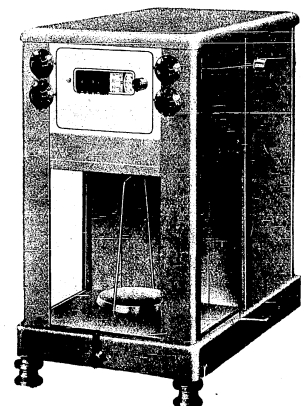
(figure 1) and it is divided into three parts:

From 0.1 gram to 99.9 grams read directly from indicator (1)
 From 1 milligram to 100 milligrams read directly from projection scale (2)
 From 0.05 to 0.1 milligram read directly from vernier (3)

2. Rapid Weighing:

The time required for weighing with this balance is less than 1/3rd of that of an ordinary balance. After the zero point is adjusted, weighing is done simply by turning the control knobs. Every weighing can be done in less than 30 seconds. Due to the ingeniously designed air-damping device, the balance is brought to rest quickly after only a few oscillations.

Model NUCSP



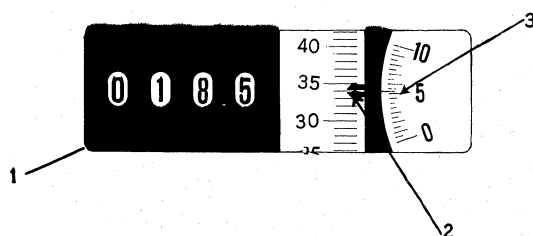


Figure 1

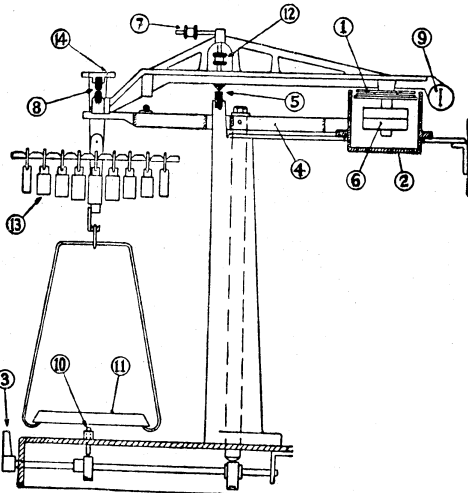
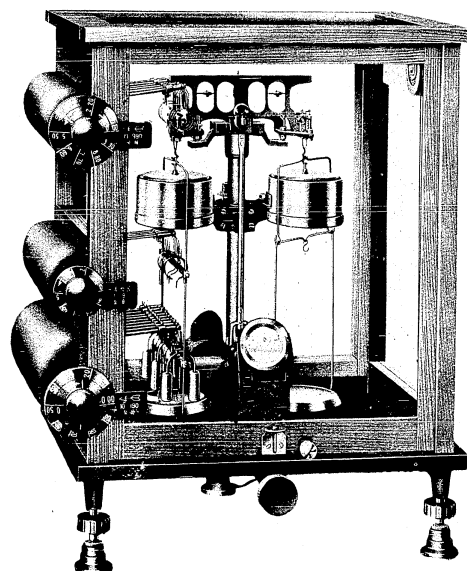
3. Simplicity:

- a. No arithmetic calculation is needed since the total weight is read directly off the indicator scale.
- b. When weighing, simply detach weights corresponding to the article weighed by turning the control knobs, and the total weight is read right off the projection scale.

DIAGRAM:

1. Adjustable plates for the elimination of errors due to atmospheric changes
2. Air damping device
3. Arrestment lever
4. Beam arrestment
5. Center knife edge and plane of agate
6. Compensating weight for pan and weights
7. Compensating weight for adjustment of the zero point
8. Fine agate knife edge and plane
9. Optical scale plate
10. Pan brake lever
11. Pan, circumference 100 mm.
12. Sensitivity compensation adjustment weight
13. Set of weights; two 25-g; two 10-g; five 5-g; one 2-g; two 1-g; one 500-mg; one 200-mg; and two 100-mg.
14. Stirrup from which the weights and pan are suspended

Diagram:

**CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION**

Model NCAPD

ANALYTICAL BALANCE
AUTOMATIC PROJECTION READING FOR RAPID AND RELIABLE WEIGHING

Capacity: 200 grams

Sensitivity: 0.1 milligram

SPECIAL FEATURES:

- Air-damping
- Projection Reading
- External Application of All Weights
- Zero Point Adjustment from Outside of Case

CONSTRUCTIONS:

Beam:-

Brass alloy in flat form, 140 mm long, chrome plated

Knife edges and plane:-

Finest agate

Weights:-

Brass, chrome plated

Pans:-

Slightly concave, chrome plated

Compensating suspension:-

Movable in all directions, pendulum motions of the pans without any effect upon the blocks

Air-damping:-

Without diminution of sensitivity, brings the balance to rest in 3 to 4 seconds

Projection reading with automatic light switch and adjustable device:-

Range 0.1 mg. to 10 mg, direct reading to the exactness of 0.1 mg. A.C. transformer included, applicable to house current

Mechanical manipulation of weights from outside the case:-

From 10 to 990 mg. by means of the upper dial &/or turning knob

From 1—9 g. by means of the middle dial

From 10 to 190 g. by means of the lowest dial &/or turning knob

Arrestment:

By means of central knob which also operates as switch for projection light

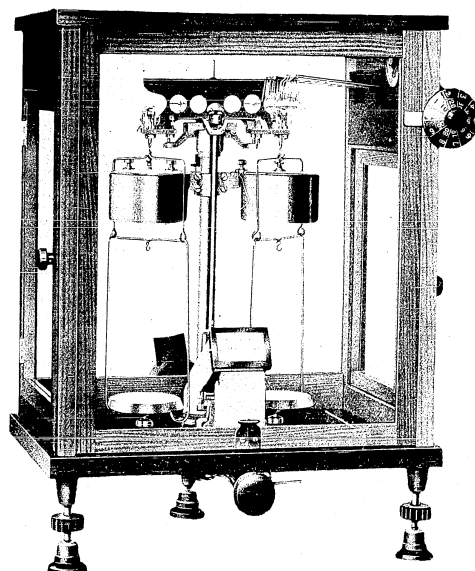
Zero point adjustment:

From outside the case by means of a small knob beside the arrestment knob

Base plate:

Mirror glass with levelling screw and shock absorbers

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Model SAOOG

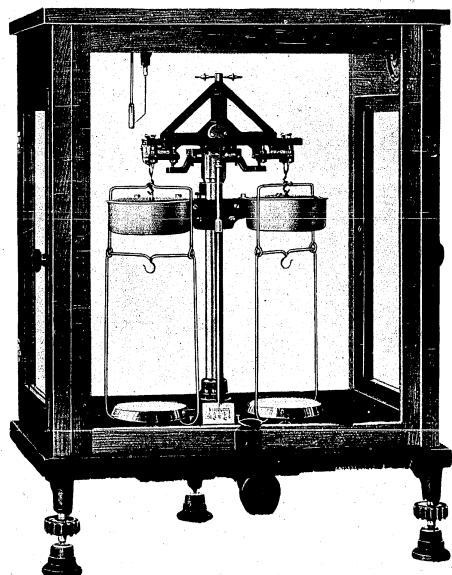
ANALYTICAL BALANCE SEMI-AUTOMATIC PROJECTION READING FOR RAPID & RELIABLE WEIGHING

Capacity: 200 grams

Sensitivity: 0.1 milligram

With all special features and similar constructions as NCAPD except that the mechanical manipulation of weights from outside the case is only for range of 10 mg. to 990 mg.

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Model FANOF

ANALYTICAL BALANCE

Capacity: 100/200 grams

Sensitivity: 0.4 milligram

Beam:

140 mm long, aluminium alloy with colorless anti-oxidizing lacquer

Graduation:

To ensure accurate placement of rider, the indicating scale attaching to the beam is serrated and notched into 50 divisions from Central "0" to each side, each division representing 0.2 mg when placing a 10 mg rider on the scale

Knife edge & plane:

Agate

Rider slide:

Vertical type, spring loaded, traversing the whole length of the beam

Releasing Mechanism:

Automatically acting on hangers, beam and pans, operated from outside the case

Pans:

Chrome plated, slightly concave, diameter 73 mm

Pan supporters:

Adjustable with special spring plunger so that oscillation does not occur when setting the balance into operation

Reading Index:

20 divisions from "0" on the right to "20" on the left

Air-damping:

The swing of beam is damped by detachable air damping device

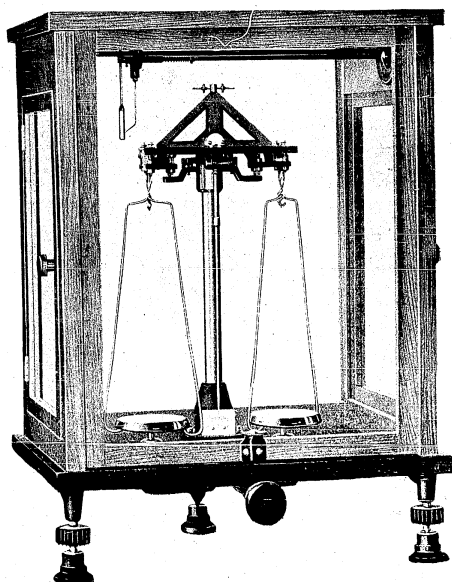
Finish:

All metal parts are protected with either chrome plating or anti-corrosion lacquer

Case:

Polished teak, with counterpoised front slide and hinged side doors. Black plate-glass or marble base. Levelling screw and bubble levelling system

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION



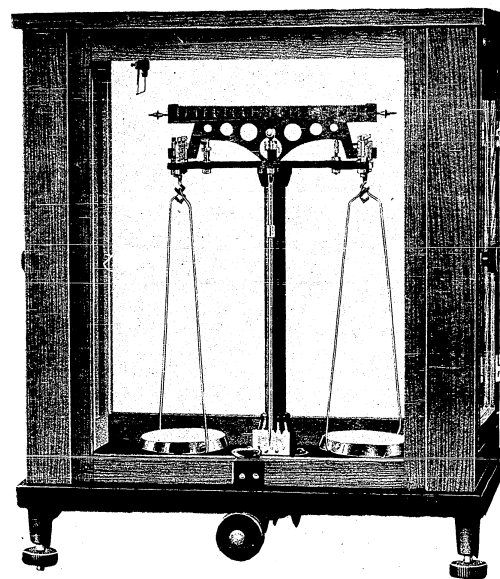
Model NODOF

ANALYTICAL BALANCE

Capacity: 100/200 grams Sensitivity: 0.4 milligram

This balance is similarly constructed as FANOF with the exception that no Air-damping device being provided.

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION



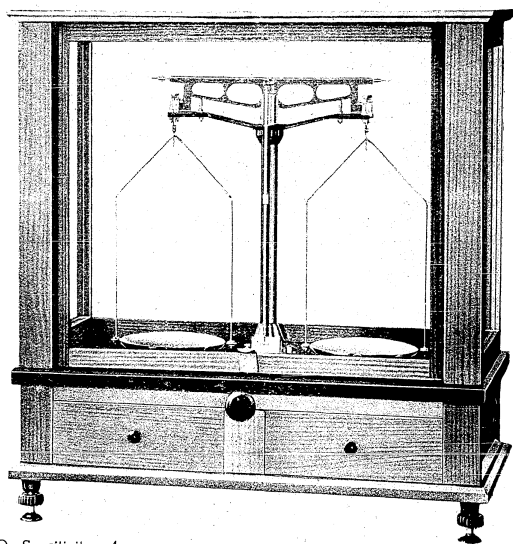
Model SNBOM

PRECISION BALANCE

Capacity: 100/200 grams Sensitivity: 1 milligram

A precision balance for schools, laboratories and/or chemical works. With rider slide. Agate knife edges and planes. Arrestment controlled by central knob.

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION



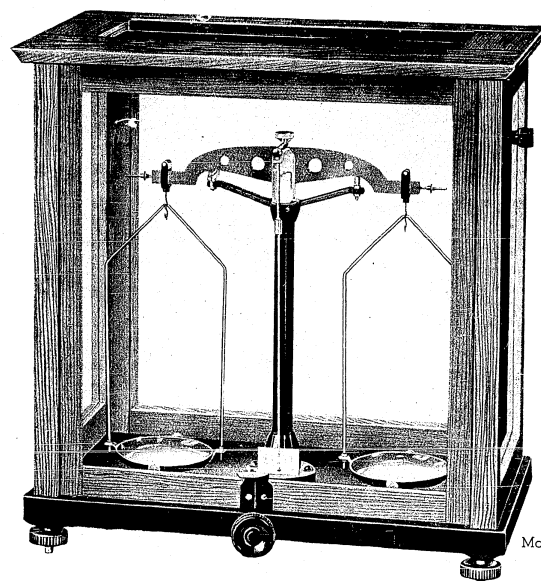
Model CTNAO Sensitivity: 4 mg.
Model CTFMG Sensitivity: 20 mg.

PRECISION BALANCE

Capacity: 100 grams. Sensitivity: 4 mg. or 20 mg.

This precision balance is specially designed for textile industries, with brass alloy beam, riderless, 2 concave bakelite round pans. These balances are contained in polished teak cases with counterpoised front slide doors, black lacquered wooden base, levelling screw and plummet.

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION



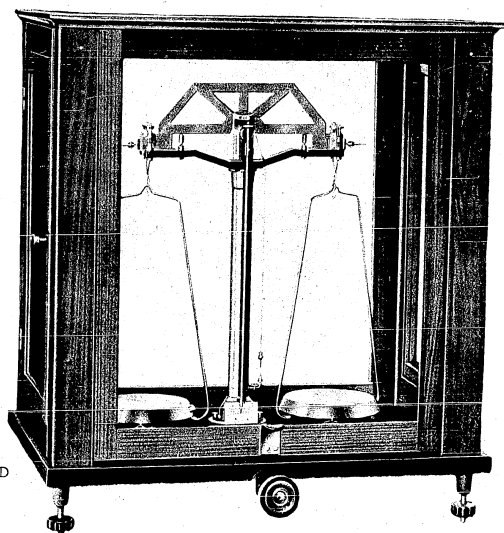
Model MAWTT

PRECISION BALANCE

Capacity: 100 grams Sensitivity: 10 milligrams

This precision balance is specially designed for mineral industries, schools and laboratories, riderless, concave bakelite pans diameter about 75 mm, aluminium alloy beam with colorless anti-oxidizing lacquer, agate knife edges and planes. The case is of polished hardwood, counterpoised front slide door, black lacquered wooden base. Levelling screw and plummet.

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Model IABHD

INDUSTRIAL ANALYTICAL BALANCE-HEAVY DUTY

Capacity 1000 grams

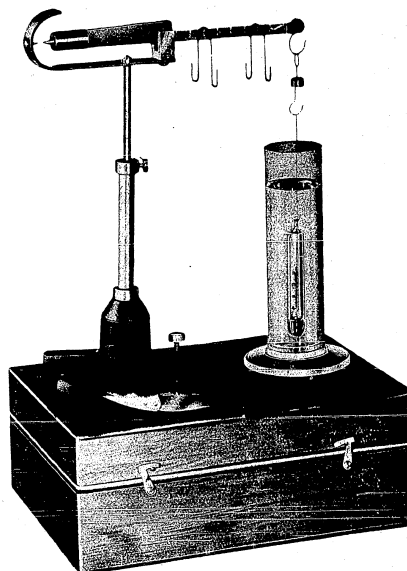
Sensitivity 2 milligrams

Diameter of Pans 107 mm

Height of Pan Holders 255 mm

Length of Beam 270 mm

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Table for DENSITY OF DISTILLED WATER
at different temperature

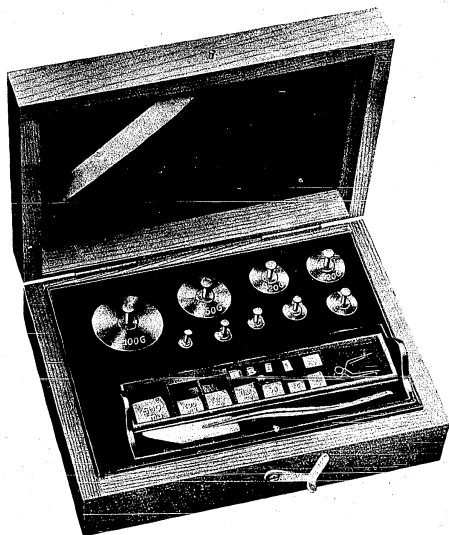
Temperature	Density	Temperature	Density
0	0.999,867	21	0.998,017
1	0.999,927	22	0.997,795
2	0.999,968	23	0.997,563
3	0.999,992	24	0.997,321
4	1.000,000	25	0.997,069
5	0.999,992	26	0.996,808
6	0.999,968	27	0.996,536
7	0.999,929	28	0.996,258
8	0.999,876	29	0.995,969
9	0.999,808	30	0.995,672
10	0.999,727	31	0.995,366
11	0.999,632	32	0.995,052
12	0.999,524	33	0.994,728
13	0.999,404	34	0.994,397
14	0.999,271	35	0.994,058
15	0.999,126	36	0.993,711
16	0.998,969	37	0.993,356
17	0.998,801	38	0.992,993
18	0.998,621	39	0.992,622
19	0.998,430	40	0.992,244
20	0.998,229		

Model SGBTF

SPECIFIC GRAVITY BALANCE-WESTPHAL PRINCIPLE

Complete with rider weights, plummet (displacement 5 cc) with platinum wire and stainless steel hook, the thermometer connected therewith is graduated from 0 to 35 degrees Centigrade and it is for determination of Specific Gravity of all liquids up to 2 S.G. The beam of the balance is fitted with steel knife edge supported in agate channel and is precisely serrated in 10 divisions. Before leaving the factory, the balance is subjected to rigid test to conform strictly to the table herewith.

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION



ANALYTICAL WEIGHTS

Calibrated weights of high accuracy are supplied together with our balances without extra charges. They are placed in velvet lined polished wooden box in the sequences:

100g	1	500 mg	1
50g	1	200 mg	2
20g	2	100 mg	1
10g	1	50 mg	1
5g	1	20 mg	2
2g	2	10 mg	1
1g	1	5 mg	1
		2 mg	2
		1 mg	1

The weights of 50 mg and under are made of aluminium.

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION

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TIENTSIN: 171 Kien Shieh Road.
Cable Address: "INSTRIMP"
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Cable Address: "INSTRIMP"

20

STAT

INSTRUCTIONS FOR
WORKING AND ASSEMBLY OF
OUR ANALYTICAL BALANCES

中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
SHANGHAI, CHINA IMPORTERS & EXPORTERS

AUTOMATIC PROJECTION READING ANALYTICAL BALANCE (SINGLE PAN TYPE)

DIRECTIONS FOR USE:

"Single Pan" Automatic Projection Reading Analytical Balances are instruments of highest precision. Although they are simple in operation, it is essential they are handled with utmost care. The following rules should therefore be observed:

1. Do not load or unload the pan until the balance is arrested.
2. Move the release slowly until the light goes on.
3. Handle the rider bar gently.
4. When the balance is arrested, rotate the left knob clockwise from 10 to 90 g., the two right knobs counter clockwise from 1 to 9 g. and 0.1 to 0.9 g. respectively.

WEIGHING:

Before each weighing, level the balance by means of the spirit level (28) provided within the case and adjust the zero position as follows:

With no load on the pan, the knobs are set at 000.0 and the micrometer is adjusted to zero. Then move the arrest lever slowly to the left. Let the beam stabilize. By turning knob (24) on the right side of the balance, the zero on the projected scale should be set exactly between the fixed double-line (25) on the screen. If the above adjustment is not sufficient, remove the cover, check the beam (15) and suspension gear (5) to locate the cause of friction, and then move the horizontal adjustment weight (7) on the beam accordingly. Move the weight (7) forward if the projected scale is too high, and backward if it is too low.

When the above adjustment has been completed, a trial weighing should be made as follows:

Place a known weight, say 0.1 g. on pan. Partially release the pan by turning the arrest lever to the right. If the weight shown on the projected scale is lighter than 100 mg., projected scale and pan should be slightly lifted; if heavier, slightly lowered. When the scale reads exactly 0.1 g., move arrest lever slowly to the left to give full release of the beam. A correct result will thus be obtained. Example of weighing:

Suppose the weight of the sample is 18.53452 g. Set knob A at 10 g. Turn arrest lever to the right, the projected scale will move downwards, i.e. its zero remains about 5 divisions below the double-line on the screen. This shows the sample on pan weighs more than 10 g. Arrest the balance, set knob A at 20 g., and again turn arrest lever to the right. The scale moves upwards. The weight of the sample must therefore be between 10 and 20 g. Arrest balance, switch knob

A back to 10 g. Move arrest lever to the right and turn knob B until the scale moves upwards. This will happen at 9 g. At this moment, the counter indicates 18.5 g. The remaining 4 decimals are determined optically by turning the arrest lever fully to the left. After a few small oscillations, the optical scale comes to rest between the 34th and the 35th divisions. The small knob (27) is now turned until the line of the 34th division of the projected scale is set exactly between the double-line on the screen, as in fig. II. The final result will read 18.53452 (see figure III).

Return knob B to 8 g. and proceed likewise with knob C. Result 0.5g.

SENSITIVITY:

To check the sensitivity of the projected scale, place a 100 mg. weight on the pan, turn knob C to 0.1 g., release balance, and adjust zero. (Cover and windows must be closed). Before the projected scale correctly shows 100 mg., do not arrest and do not turn knob from 0.1 g. back to 0. If the scale reads 99 for instance, the sensitivity must be increased by raising the vertical adjustment weight (6). If it reads more than 100, the weight should be lowered accordingly. The balance must have reached the room temperature before the sensitivity can be adjusted.

IMAGE:

If the image of the optical scale is not clear enough, remove the cover, loosen screw (22a) and move objective (22). Tighten screw (22a) again.

If the line of the projected scale do not coincide with the double-line of the screen, rotate prism turntable (23).

If the projected image is coloured or too dark, move bulb (19) upwards.

PAN:

When the balance is arrested, the pan should just touch the brake (1) below it. If the braking is too great or too little, raise or lower the pan by bending or unbending suspender (16).

In case the pan requires to be replaced by one of different weight, screw (25) may be added onto pan-bridges to restore balance.

FOUL CONTACT:

When the balance is released, the projected scale should swing up and down 2 to 3 times before it comes to rest. Coming to rest abruptly indicates that the beam or the suspension is fouling somewhere. Remove the cover to locate cause of friction.

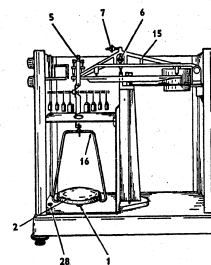


FIGURE I.

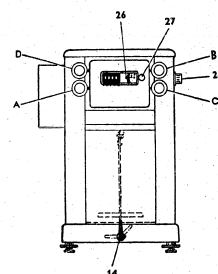


FIGURE II.

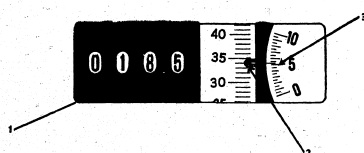


FIGURE III.

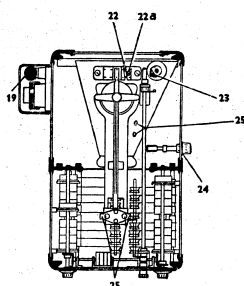


FIGURE IV.

AUTOMATIC ANALYTICAL BALANCE

for

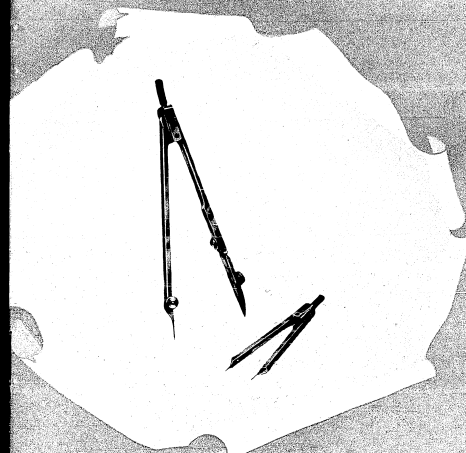
Rapid and Reliable Weighing

Capacity: 200 gm. Sensitivity: 0.1 mg.

INSTRUCTIONS FOR ASSEMBLY:

1. Level the balance with the help of the spirit level by turning the levelling screws.
2. Ascertain the type of current and voltage to be adopted before connecting the transformer.
3. Fix the lamp housing on the condenser tube in the rear, insert one end plug into the transformer and another into the socket underneath the balance base plate.
4. Insert arrest knob into shaft. By turning the knob to right or left, the beam support comes downwards. Grasp pointer of beam at its middle, clean knife edges gently with fine soft cloth or handkerchief, then mount beam on support. Turn the knob to right or left to raise the support.
5. Suspend damping cylinders from the lower hooks of suspension pieces.
6. Suspend pans by inserting into upper hooks of stirrups, after the arrest device has been fitted on. If the arrestment is too great or too little, lower or raise the device by turning its cap.
7. If the image is not bright enough, loosen the knurled-screw which holds the lamp socket in place and shift the socket until the scale image becomes brightly and uniformly illuminated. Then fasten the knurled-screw tightly. If the scale image is not perfectly focussed, loosen set screw of objective and shift same along its two guiding rods until the scale is sufficiently clear.
8. Release the balance, and check whether the pointer coincides with the graticule. If any adjustment is required, it can be effected by means of the screws on the beam.

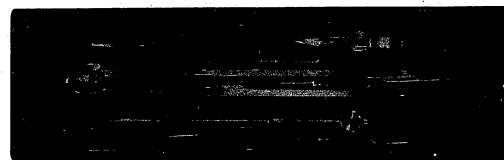
PRECISION DRAWING INSTRUMENTS



中國儀器進口公司
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION

INTRODUCTION

1. The material used is an alloy of nickel and bronze guaranteed, to last a lifetime and keep the original good look permanently.
2. All single parts are precisionally made, all fit perfectly.
3. All pen parts are made of high grade steel with scientific heat treat process, assuring to draw lines within 1200 meters without resharpening.
4. All individual instruments have been tested before leaving the works to assure high accuracy.
5. The parts of the screw threads and accessories are made of stainless steel so that they never oxidize and give long service. Others are heavily chromed.
6. The cases from 2001 to 114 are flat and smooth with rounded corners and edges, covered with black fine oil cloth and lined with good quality velvet.
7. The cases of 115 and 121 are made of fine solid wood and lined with good quality velvet, keeping the appearance handsome and enduring.



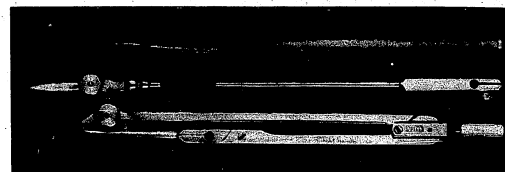
2001

1:2

6" compass with pen, pencil, divider and extension bar, all interchangeable.

Precisionally used for drawing circles about 4" in diameter up to 12".

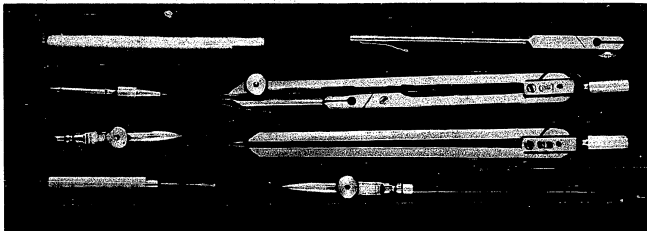
Both legs of the compass are supplied with joint or hinge, so that the points can be perpendicular to the paper.



100

1:2

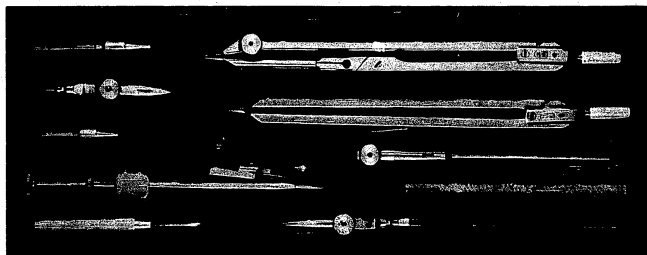
6" compass with pen, pencil, divider, extension bar and a handle for ruling pen attachment, thus forming a drawing pen. Suitable for beginners and users during travelling.



103

1:2

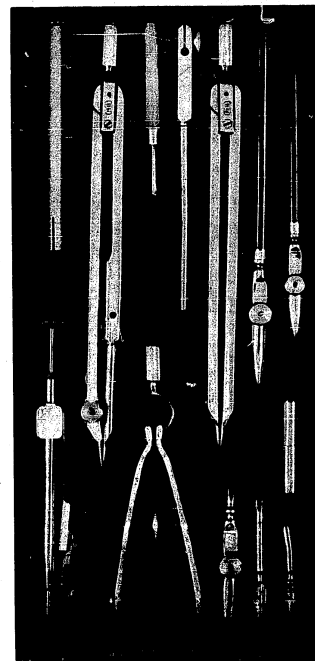
School drawing set, consisting of large compass with attachments, divider, ruling pen, handle for pen attachment and screwdriver.



104

1:2

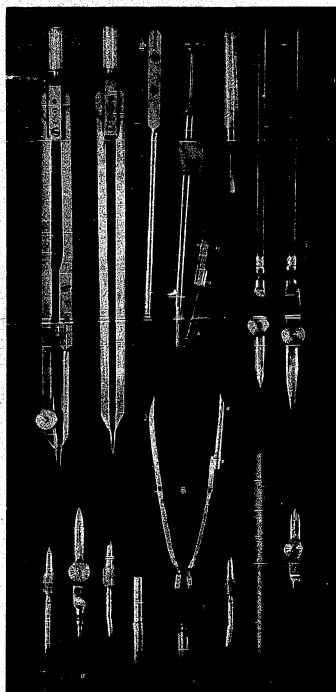
Including all the individual instruments in 103, with the addition of a drop compass which is used only for very small circles, having the merit of time-saving and accuracy.



106

1:2

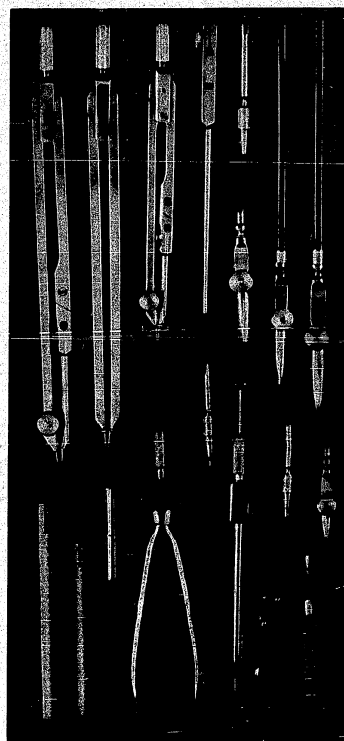
Very attractive students' set, consisting of 6" large compass with attachments, divider, spring bow divider, drop compass, small and medium size ruling pens, handle for pen attachment, screwdriver and lead box.



107

1:2

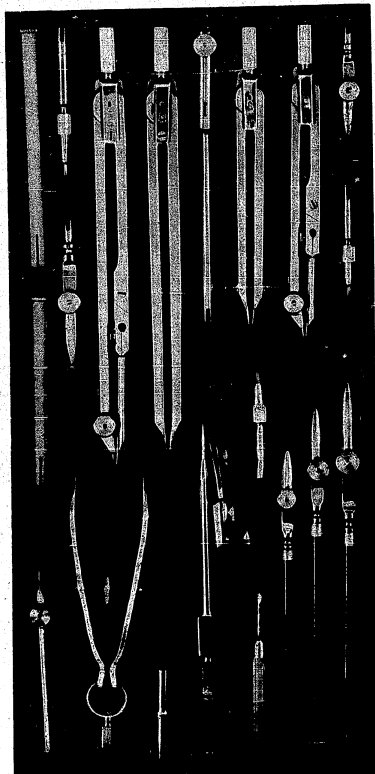
Another attractive students' set, consisting of some instruments as 106, but with spring bow attachments instead of spring bow divider and large size ruling pen instead of small size.



109

1:2

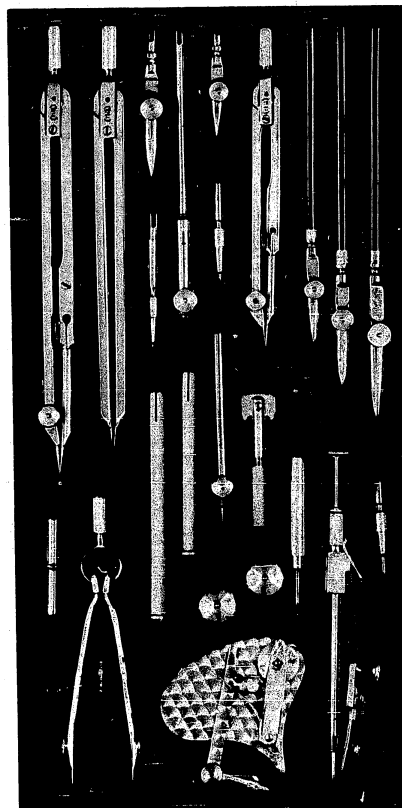
Suitable drawing set for engineers and technicians, consisting of two compasses with attachments, two dividers, three ruling pens, one double-spring drop compass, two handles for pen attachments.



111

1:2

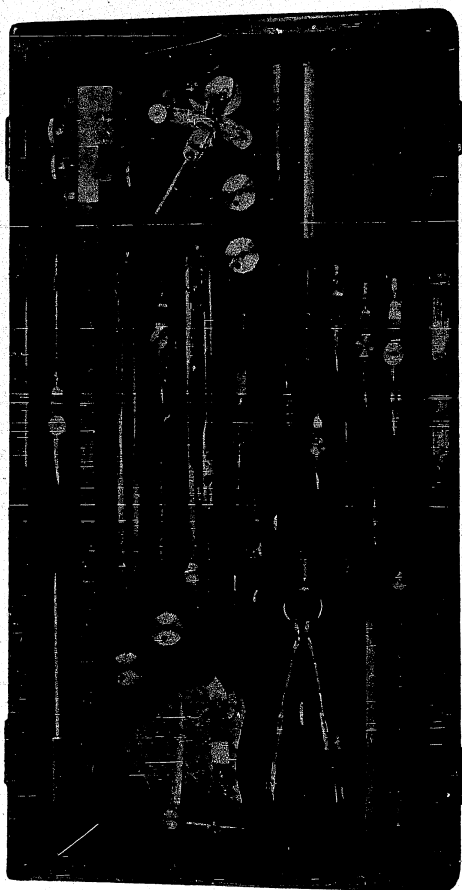
A special combination set for engineers and architects, consisting of two compasses with attachments, three ruling pens, one drop compass and accessories. The concentric piece is provided to avoid leaving a large visible hole when drawing a series of concentric circles.



114

1:2

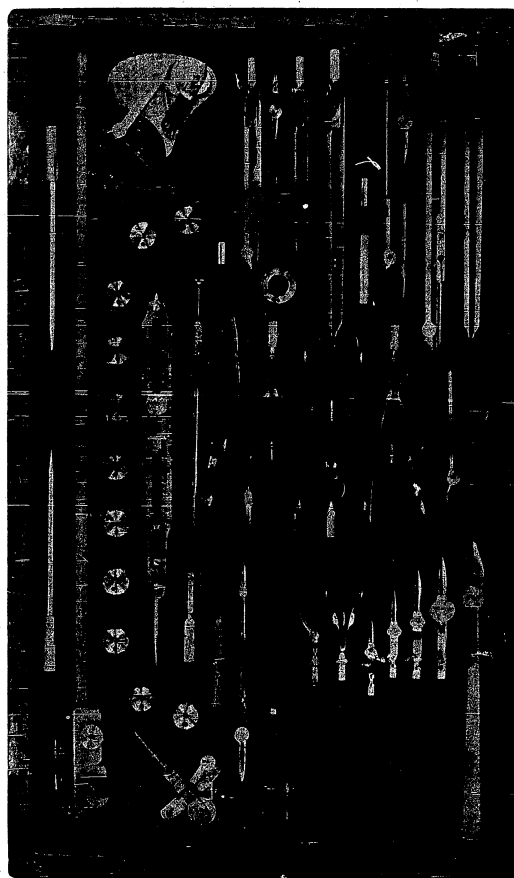
A comprehensive precision drawing set for draftsmen, architects, surveyors and engineers, consisting of two compasses, two dividers, three ruling pens, drop compass, dotting instrument and other accessories.



115

1:2

Special set for engineers, architects, technicians and draftsmen, consisting of compasses, divider, spring bow compass, drop compass, beam compass, two dotting instruments, three ruling pens and other attachments and accessories.

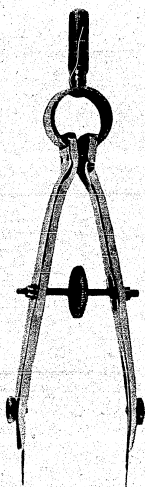


121

1:25

The complete precision drawing set assorted with so many special instruments such as beam compass, dotting instruments, curve pens, border pens, proportional divider and hairspring divider that it is greatly appreciated by the modern engineers, architects, technicians and draftsmen.

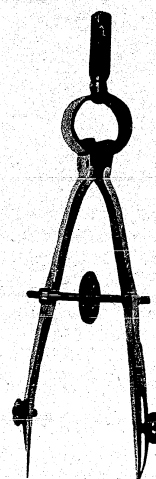
SPRING BOW COMPASS



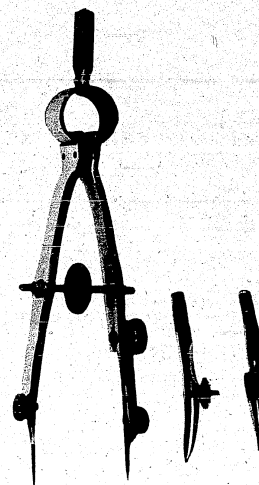
2007



2008



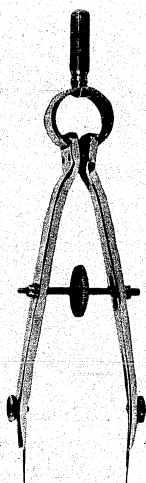
2009



2010

The legs of the spring bow compass are fixed to a spring head and regulated by means of a nut between the legs with adjusting screws at both sides. The merit is that the distance can be easily adjusted as required and once adjusted, the legs will never move no matter how many lines are divided or arcs drawn.

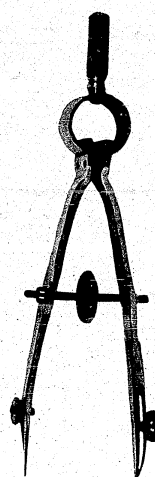
SPRING BOW COMPASS



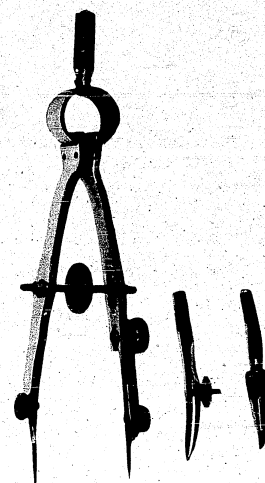
2007



2008



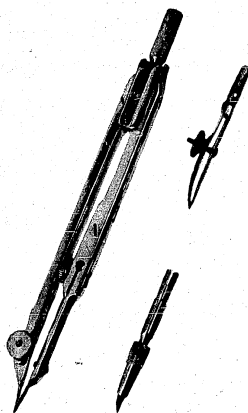
2009



2010

The legs of the spring bow compass are fixed to a spring head and regulated by means of a nut between the legs with adjusting screws at both sides. The merit is that the distance can be easily adjusted as required and once adjusted, the legs will never move no matter how many lines are divided or arcs drawn.

COMPASS

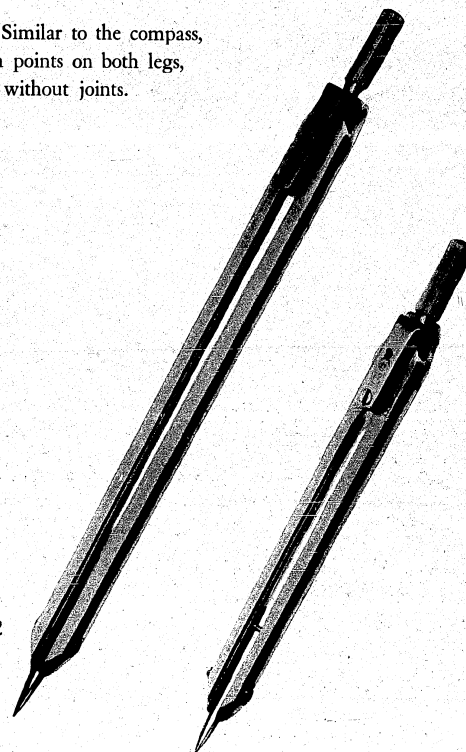


2004

4" compass with pen, pencil and divider attachments. Same construction as 2001. Suitable for circles below 4" in diameter.

DIVIDER

Similar to the compass, with points on both legs, but without joints.

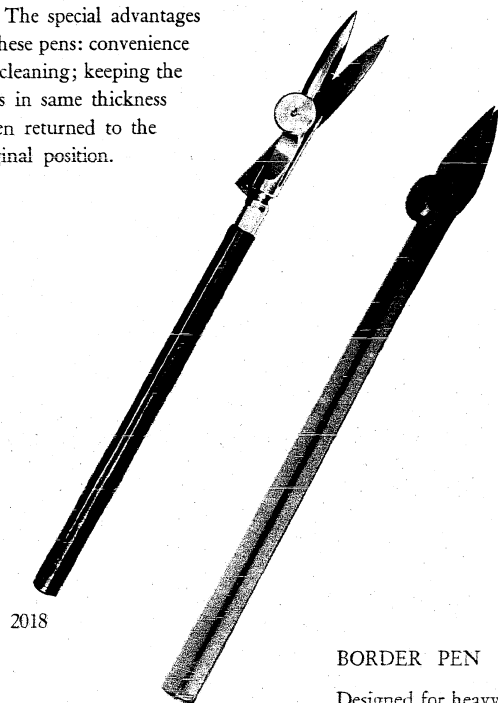


2002

2005

CROSS JOINT RULING PEN

The special advantages of these pens: convenience for cleaning; keeping the lines in same thickness when returned to the original position.



2018

1029

BORDER PEN

Designed for heavy and long lines, with aluminium handle.

DOUBLE LINES PEN

Also called "road pen", can be used for drawing very heavy lines when filled with ink between the two pen points.



1035

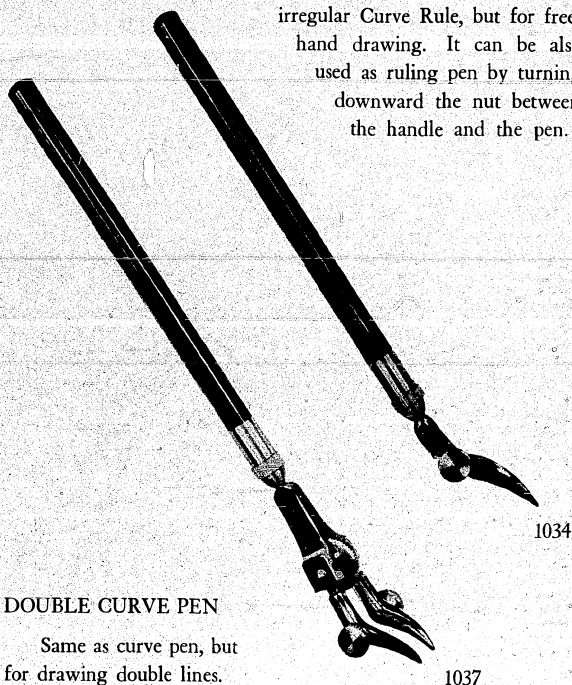
1033

INDEX PEN

With spring catch and index to the nut to indicate by number the thickness of the line.

CURVE PEN

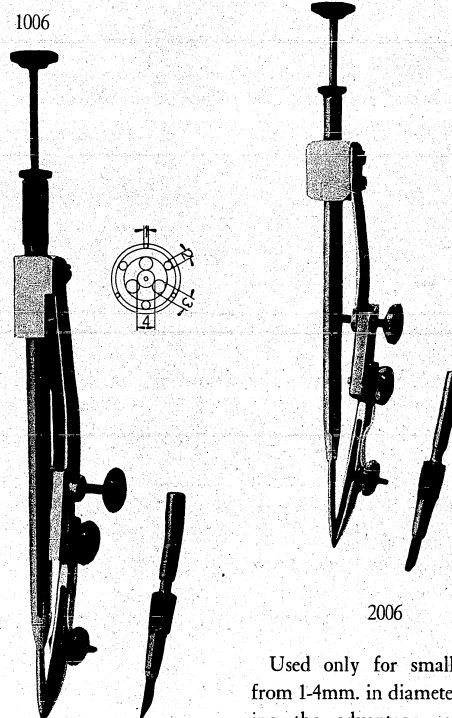
Specially made for drawing railroads and highways (topographic maps). Not to be used for drawing together with irregular Curve Rule, but for free-hand drawing. It can be also used as ruling pen by turning downward the nut between the handle and the pen.



DOUBLE CURVE PEN

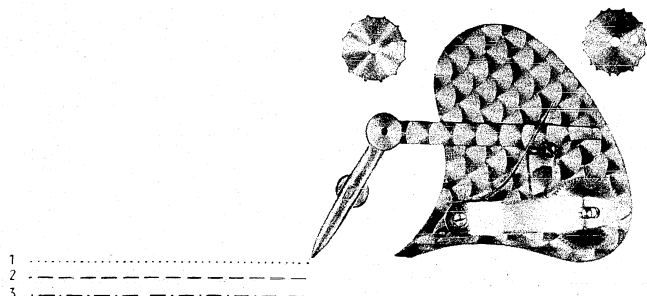
Same as curve pen, but for drawing double lines.

DROP COMPASS



Used only for small circles from 1-4mm. in diameter. Having the advantages of time-saving and accuracy.

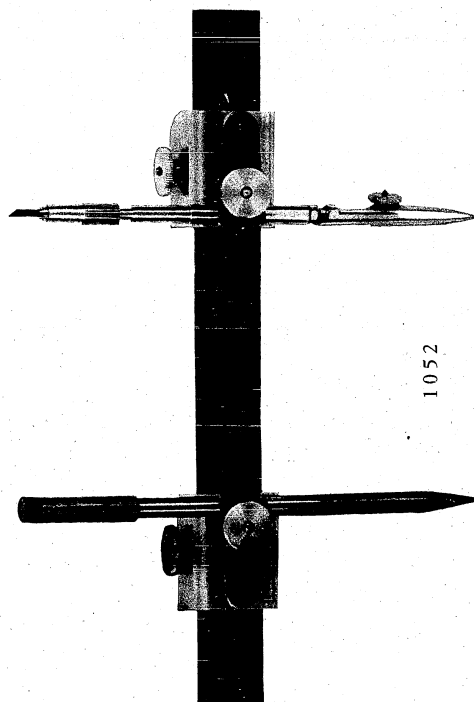
DOTTING INSTRUMENT



1 0 4 2

Specially used for drawing dotting lines, not only saving time but also assuring uniformity. Provided with three dotting wheels for drawing three different kinds of dotting lines. The ruler made in wood of about 3.4mm. thickness is better than that made of any other materials such as metal, plastic and celluloid.

BEAM COMPASS

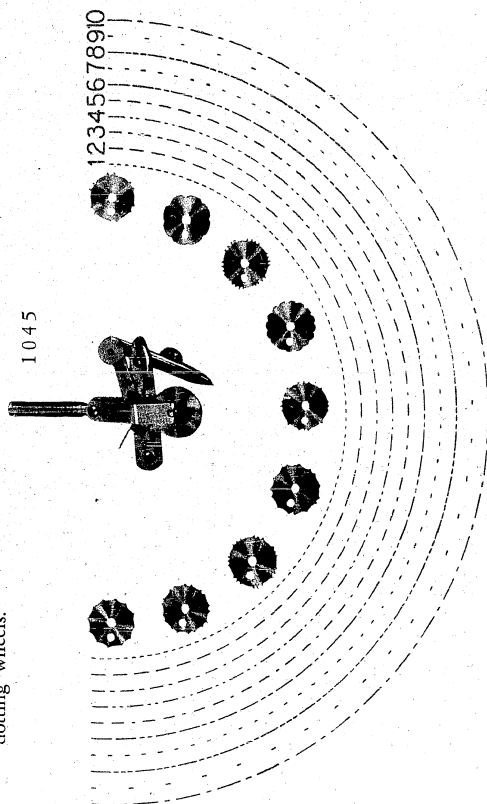


1 0 5 2

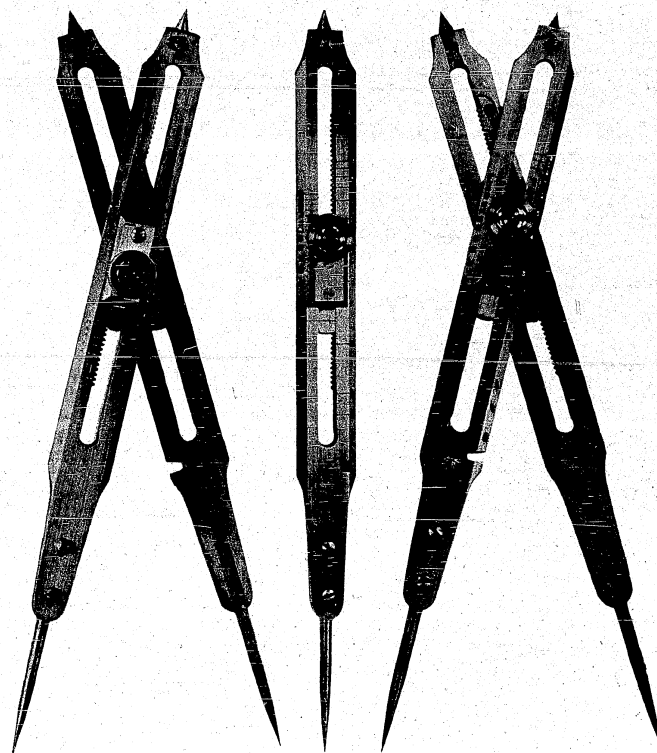
For circles of large diameters usually up to 500mm. For special purposes it can be used even up to 4800mm., but in such cases the drawing will require two persons. If the wooden bar is not long enough, the users can replace it with another one of the same thickness and width.

DOTTING INSTRUMENT USED ON BEAM COMPASS

Used for drawing dotting circles by the beam compass, provided with ten dotting wheels.



PROPORTIONAL DIVIDER



1046

7½", with movable points, finely divided for lines, circles, planes and solids, with rack movement.

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION

HEAD OFFICE:

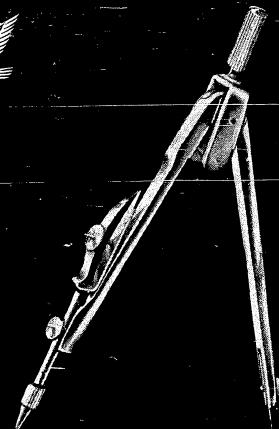
Er-Li-Kou, Hsi Chiao, Peking, China.
Cable Address: "INSTRIMP"

BRANCH OFFICES:

SHANGHAI: 27 Chungshan Road (E.I).
Cable Address: "INSTRIMP"
TIENTSIN: 171 Kien Shieh Road.
Cable Address: "INSTRIMP"
CANTON: 25 Tai Ping Road, S.
Cable Address: "INSTRIMP"

BOOKLET S1002

THREE-PURPOSE COMPASSES



中國儀器進口公司天津分公司
天津市新華區彰德道十四號

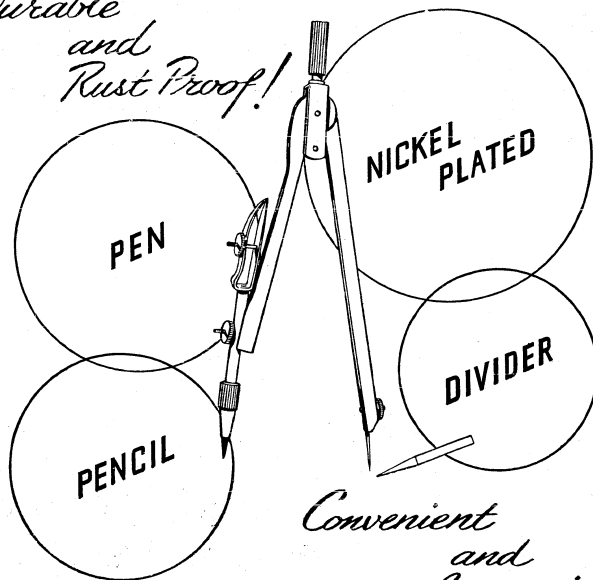
CHINA NATIONAL INSTRUMENTS IMPORT CORP., TIENTSIN BRANCH.
(Importers & Exporters)

14. CHANG YEH TAO, HSIN HUA DISTRICT, TIENTSIN.

CABLE ADDRESS: "INSTRIMP"

*Durable
and
Rust Proof!*

經久耐用
價格低廉



鐵鎳鍍合金
永不生鏽

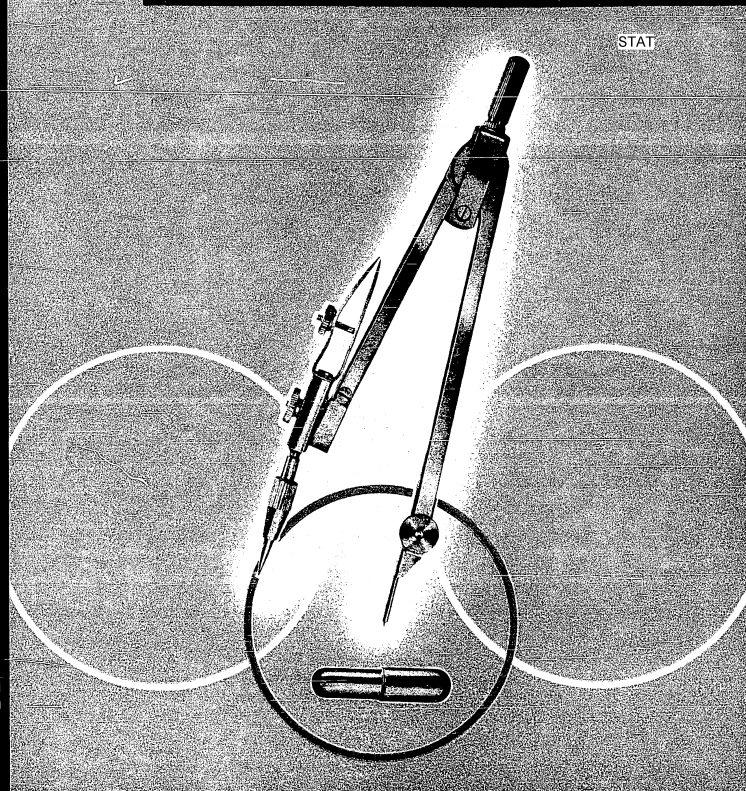
*Convenient
and
Economical!*

SPECIFICATIONS :

OVER ALL LENGTH 110 m.m.
MAXIMUM CIRCLE 110 m.m. in diameter.
PACKING Each in silk lined cardboard box.

THREE PURPOSE COMPASSES

STAT



CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

THREE PURPOSE COMPASSES

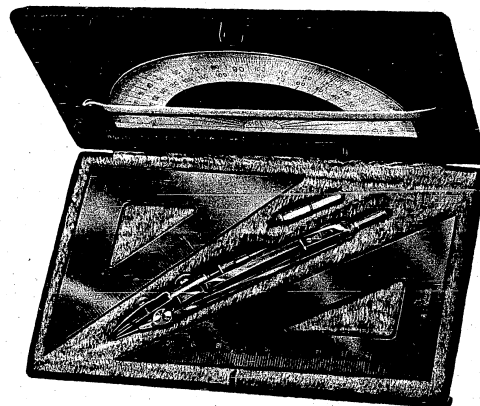
4" compasses with alternative pen, pencil and divider point, suitable for circles below 4" diameter, handsome in appearance and durable in application.

三 用 圓 規

三用四吋圓規具有可交互使用的銅筆鉛筆和分規頭子適用於繪製四吋以下對徑的圓周此種圓規外表漂亮堅固耐用

MATHEMATIC INSTRUMENT SET

STAT



CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION
(IMPORTERS & EXPORTERS)

MATHEMATIC INSTRUMENT SET

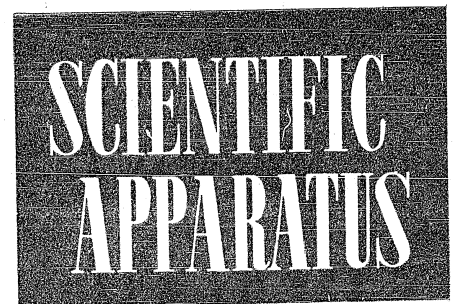
Attractive students' set consisting of one pair of plastic plain 5" Triangles, one piece of 5" Semi-circular Protractor and one 4" Compasses, with alternative pen, pencil (with lead refill tube) and divider point, suitable for drawing circles below 4" diameter. The whole set being presented in a handsome case with reliable locking device, covered with black Morocco cloth and lined with good quality velvet. It is handy and possesses the advantages of durability and accuracy.

三種幾何儀器

學生用三組幾何儀器每套包含五吋透明膠質三角板一對，五吋半圓規一只及四吋圓規一件，圓規附有鋼筆，鉛筆和分規頭子，可以交互使用，此外還附有鉛心一小管。此項儀器全套係裝於一裝璜精美的黑漆布盒中，內襯極為考究的絨裏，此種幾何儀器，攜帶便利，準確耐用，學生繪圖人員等，均宜配备。

物理儀器 · 生物模型 · 標本 · 顯微鏡切片

STAT



出口下列各類科學儀器

高等物理儀器

主要範圍

度量衡器械
測驗器械
物理學
力學
分子物理及熱學
磁學 電學 光學

中學物理儀器

主要範圍

支持器械 度量衡器械
固體、液體、氣體力學
物性 熱學 磁學
靜、動電學、聲學、光學
600-1500倍顯微鏡
解倍顯微鏡

化學玻璃儀器

主要範圍

量杯、量筒、量瓶
安全漏斗、漏斗
酒精燈、研鉢、水槽
試管、燒杯、燒瓶

模型標本

主要範圍

植物、動物標本及模型
人體生理、病理模型
環境衛生模型
營養食品模型
地質地理模型 礦物標本
非金屬、金屬標本
金屬與合金標本
顯微鏡切片標本

數學模型

主要範圍

平面幾何模型
立體幾何模型
三體解折幾何模型
微積分模型
機械製圖模型
畫法幾何教學實驗模型
透視模型

生物器械

解剖顯微鏡10X-30X

毒瓶、采集箱
空中、水中捕蟲網
振棒器、展翅板
植物采集袋

中國儀器進口公司

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION

(IMPORTERS & EXPORTERS)

物理演示儀器 PHYSICAL APPARATUS

通用儀器 GENERAL APPARATUS

0001-2	長方體組	Rectangular Cube Weights
0002-2	受皿天平	Table Balance, Laboratory
0003-2	槽碼 1-200 克	Slotted Weights
0004-2	槽碼 1-500 克	Slotted Weights
0005-2	槽碼 20 克	Slotted Weights
0006-2	槽碼盤 20 克	Slotted Weight Disc
0007-1	皮叩	Hand Bellon
0008-1	電動抽氣機	Vacuum Pump with Motor
0009-1	手搖抽氣機	Pump, Hand-driven
0010-1	帶壓力計抽氣盤	Air-pump Plate with Pressure Gauge

力學 MECHANICS

0011-2	慣性球	Inertial Ball
0012-2	慣性實驗器	Inertial Apparatus
0013-2	牛頓第二定律實驗裝置	Newton's Second Law Apparatus
0014-2	平板小車	Platform Carriages
0015-2	反衝水力機模型	Model of Recoil Hydraulic Machine
0016-1	牛頓管	Newton Tube
0017-2	簡單阿特武德機	Simple Atwood's Machine
0018-2	演示拋物線器	Parabolic Projector
0019-2	平拋和自由落體等時實驗器	Level Throw and Free Falling Body Isochronous Apparatus
0020-2	吊車模型	Model of Hoist
0021-2	麥克斯韋滾擺	Maxwell's Revolving Pendulum
0022-2	圓形測力計	Dial Dynamometer
0023-2	重心板	Center of Gravity Plates
0024-2	物體穩度演示器	Demonstration Apparatus for Centre of Gravity
0025-2	侯風地動儀模型	Model of "Hou-Feng" Seismoscope
0026-2	滑輪	Pulleys
0027-2	滑輪組	Pulleys set
0028-2	輪軸	Wheel and Axle
0029-2	斜面附滑輪	Inclined Plane with Pulley
0030-2	螺旋模型	Model of Screw
0031-2	螺旋壓榨器	Screw-Press
0032-2	螺旋舉重器	Jack-screw Model
0033-2	捲揚機模型	Winch Model
0034-2	雙合劈	Combined Wedge, Split
0035-2	球軸承模型	Ball Bearing Model
0036-2	記里鼓車模型	Model of Drum-carriage for Mileage
0037-2	指南車模型	Compass Carriage Model
0038-1	帕斯卡定律演示器	Pascal's Law Apparatus
0039-1	側壓演示器	Side Pressure Apparatus

0040-1 液體內部壓強實驗器
0041-1 微小壓強計
0042-1 連通管
0043-1 水準器
0044-1 阿基米德定律實驗器
0045-1 液體比重計
0046-1 液體比重計
0047-1 馬德堡圓盤
0048-1 托里拆利管
0049-1 曲管氣壓計
0050-1 金屬壓強計
0051-1 無液氣壓計
0052-2 氣體彈性實驗器
0053-1 空氣抽機
0054-1 壓力抽機
0055-1 救火機模型
0056-2 水壓機模型
0057-1 流體流線演示器
0058-1 噴霧器
0059-1 空氣動力秤
0060-1 向心力實驗器
0061-1 離心機
0062-1 彈性圓環
0063-1 離心分離器
0064-1 離心分液器
0065-1 離心干燥器
0066-1 離心干達器
0067-1 離心軌道
0068-1 轉速計模型
0069-1 離心抽水機模型
0070-1 簡諧振動演示器
0071-1 鐘擺模型
0072-1 縱波橫波說明器
0073-2 力學共振演示器
0074-2 齒輪調速器
0075-2 水輪機模型
0076-2 風力發動機模型

Liquid Pressure Apparatus
Fine Manometer
Equilibrium Tubes
Level
Archimede's Law Apparatus
Hydrometer
Hydrometer
Magdeburg Discs
Torricelli Tube
Barometer
Metal Manometer
Aneroid Barometer
Gas Elasticity Tester
Vacuum Pump
Force Pump
Fire Extinguisher Model
Hydraulic Press Model
Liquid Stream-line Illustrator
Atomizer
Air Motion Scale
Centripetal Apparatus
Centrifugal Rotator
Elastic Hoop
Centrifugal Separator
Centrifugal Liquid Separator
Centrifugal Drying Machine
Centrifuge Governor
Centrifugal Track
Model of Speed Counter
Model of Centrifugal Water Pump
Simple Harmonic Oscillation Apparatus
Model of Pendulum
Vertical and Horizontal Waves Illustrator
Mechanical Resonance Demonstrator
Gear Wheel-Regulator
Water Wheel Model
Model of Wing Mill

聲 學 SOUND

0077-1 示 振 音 叉
0078-1 音 叉 $F=256$
0079-1 音 叉 $F=440$
0080-1 驗 音 盤
0081-1 發 音 齒 輪
0082-1 共 鳴 器
0083-1 絃 音 計

Tuning Fork, Vibrograph
Tuning Fork
Tuning Fork
Siren Disc
Articulation Toothed Wheel
Acoustical Resonator
Sonometer

分子物理學和熱學 MOLECULAR PHYSICS AND HEAT

0084-1 擴散實驗器
0085-1 布朗運動說明器
0086-1 內聚力實驗器
0087-2 機械能變熱能演示器
0088-2 熱功當量實驗裝置
0089-2 線膨脹演示器
0090-2 體膨脹演示器
0091-2 雙層金屬片
0092-2 熱傳導比較器
0093-2 固體縮力演示器
0094-1 水的最大比重演示器
0095-1 輻射計
0096-1 熱輻射演示器
0097-1 玻意耳-馬略特定律演示器
0098-1 膨脹計
0099-1 毛細現象演示器
0100-1 晶體空間點陣模型
0101-1 梁的彎曲實驗器
0102-1 飽和氣壓與溫度的關係實驗裝置
0103-1 藍布列希德濕度計
0104-1 干濕球濕度計
0105-1 毛髮濕度計
0106-1 蒸汽機模型
0107-1 吹動式蒸汽機模型
0108-1 蒸汽輪機模型
0109-1 內燃機模型
0110-1 四汽缸內燃機模型
0111-1 噴氣發動機模型
0112-1 氣體熱壓強係數測定裝置

Diffusion Tester
Brownian Movement Model
Cohesive Force Apparatus
Apparatus showing Transmission of Mechanical Energy into Thermal Energy
Testing Apparatus for Mechanical Equivalent of Heat
Linear Expansion Indicator
Cubical Expansion Indicator
Double Metal Plates
Heat-conduction Comparator
Indicator for Solid Minification
Indicator for the Maximum Specific Gravity of Water
Radiometer
Indicator for Heat Radiation
Boyle-Mariotte's Law Apparatus
Expansion Apparatus
Illustrator of Capillarity
Crystal space lattice Model
Beam Bending Tester
Testing Apparatus, the Relation Between Temperature and Saturated Atmosphere
Lambrecht's Hygrometer
Dry and Wet Bulb Hygrometer
Hair Hygrometer
Model of Steam Engine, Cross Section Model
Model of Steam Engine, Pumping type
Model of Steam Turbine
Model of Internal combustion Engine
Model of Four-cylinder Internal Combustion Engine
Model of Jet Engine
Air Heat Pressure Coefficient Determination Apparatus

電 學 ELECTRICITY

0113-2 玻 璃 棒
0114-2 膠 木 棒
0115-2 箔 片 驗 電 器
0116-2 指 針 驗 電 器
0117-2 驗 電 器 連 接 桿
0118-2 驗 電 羽
0119-2 驗 電 幡
0120-2 驗 電 球
0121-2 庫 倫 扭 秤
0122-2 球 形 導 體

Glass Rods
Bakelite Rods
Foil Electroscope
Needle Electroscope
Electroscope connecting Rod
Electric plume
Electric Streamer
Electric Ball
Coulombmeter
Spherical Electric Conductor

0123-2 梳形導體體
0124-2 尖形導體體
0125-2 金屬網罩
0126-2 起電盤
0127-2 感應起電機
0128-2 放電叉
0129-2 可變平行板電容器
0130-2 可變電容器
0131-2 萊打電池
0132-2 伏打電池
0133-2 鉛蓄電池
0134-3 電阻箱
0135-3 滑動變阻器
0136-3 轉柄電阻器
0137-3 定值電阻
0138-3 直線電橋
0139-3 演示用電流計
0140-3 懸圈電流計
0141-3 簡式正切電流計
0142-3 弧光燈
0143-3 電流的化學效應實驗器
0144-3 條形磁鐵
0145-3 蹄形磁鐵
0146-3 磁針
0147-3 磁分子模型
0148-3 鐵屑
0149-3 磁傾儀
0150-1 低氣壓放電管
0151-1 低氣壓放電管組
0152-1 示直進的陰極射線管
0153-1 示磁效應的陰極射線管
0154-1 示機械效應的陰極射線管
0155-1 示發生發光的陰極射線管
0156-1 倫琴射線管
0157-3 溫差電偶
0158-3 通電導體相互作用實驗器
0159-3 圓形電磁鐵
0160-3 蹄形電磁鐵
0161-3 電鈴
0162-3 電報機模型
0163-3 電話機模型
0164-3 左右手定則說明器
0165-3 楞次定律實驗器
0166-3 自感實驗器
0167-3 原副線圈
0168-3 感應圈
0169-3 可拆變壓器

Induction Cylinder
Cone-shaped Electric Conductor
Metallic Wire Netting Cover
Electrophorus
Influence Machine
Discharge Tongs
Variable Parallel Plate Condenser
Variable Condenser
Leyden Jar
Volta Cell
Lead Storage Battery
Resistance Box
Sliding Rheostat
Resistor, Arm Revolving
Constant Value Resistance
Straight Wire Bridge
Galvanometer for Illustration
Suspended Coil Galvanometer
Simple Tangent Galvanometer
Arc Lamp
Testing Apparatus For Current's Chemical Effect
Bar Magnet
Horse-shoe Magnet
Magnetic Needle
Magnetic Particle Model
Iron Filings
Dip Circle
Low Air Pressure Discharge Tube
Low Air Pressure Discharge Tube set
Straight Shot Cathode Ray Tube
Cathode Ray Tube for Magnetic Effect
Cathode Ray Tube for Mechanical Effect
Cathode Ray Tube for Fluorescence
Rontgen Ray Tube
Thermo-electric Couple
Testing device for Mutual Effect of charged conductors
Circular Electro Magnet
Horse-shoe Electric Magnet
Electric Bell
Telegraph Model
Telephone Model
Left hand and Right Hand Rules Indicator
Lenz's Law Apparatus
Self-induction apparatus
Primary and Secondary Coils
Induction Coil
Detachable Transformer

0170-3 萬用變壓器
0171-3 電機原理說明器
0172-3 手搖交流流發電機
0173-3 四伏特電動機
0174-3 交流流發電機電樞模型
0175-3 磁場轉動發電機說明器
0176-3 光電整流器
0177-3 示波器
0178-2 電共振演示器
0179- 兩極電子管
0180-3 三極電子管模型
0181-3 礦石收音機演示板
0182-3 單管收音機演示板
3 萬用電表

Universal Transformer
Dynamo Principle Illustrator
Hand driven A.C. and D.C. generator
Motor, 4 Volts
Model of Armature For A.C./D.C. Generator
Illustrator, Magnetic Field Rotary Dynamo
Charging rectifier
Oscillograph
Electric Resonator for Illustration
2-Electrode Electronic Tube
3-Electrode Electronic Tube
Illustrating Plate for Crystal Radio Receiving Set
Illustrating Plate for Single-tube Radio Receiving Set
Universal Electric Measuring Instrument

光學 OPTICS

0183-3 月地運行儀
0184-3 光具座
0185-3 全反射演示器
0186-3 凹面鏡
0187-3 雙凹透鏡
0188-3 雙凸透鏡
0189-3 透鏡組
0190-3 三棱鏡
0191-3 直角三棱鏡
0192-3 顯微幻燈裝置
0193-3 幻燈反射裝置
0194-3 生物顯微鏡
0195-3 顯微鏡模型
0196-3 指示接目鏡
0197-3 解剖放大鏡
0198-3 讀數放大鏡
0199-3 望遠鏡模型
0200-3 棱鏡雙筒望遠鏡模型
0201-3 天文望遠鏡
0202-3 牛頓環
0203-3 七色板
0204-3 色玻璃
0205-3 分光鏡
0206- 演示光電管

Moon and Earth Motion Model
Optical Screen
Full Reflection Illustration Apparatus
Concave Mirror
Double Concave Lens
Double Convex Lens
Lens Set
Prism
Prism, Right-Angle
Micro-Projector
Projector Reflecting Device
Biological Microscope
Microscope Model
Indicating Eye-lens
Dissecting Microscope
Reading Magnifier
Telescope Model
Model of Prism Binoculars
Telescope, Astronomical
Newton's Ring
Color Disc
Colored Glass Plates
Spectroscope
Demonstrating Photoelectric Cell

原子結構學 ATOMIC STRUCTURE

0208-2 威耳遜雲室
0209-2 閃爍鏡

Wilson's Cloud Chamber
Spintharoscope

0123-2 枕形導體
0124-2 尖形導體
0125-2 金屬網罩
0126-2 起電盤
0127-2 感應起電機
0128-2 放電叉
0129-2 可變平行板電容器
0130-2 可變電容器
0131-2 萊頓瓶
0132-2 伏打電池
0133-2 鉛蓄電池
0134-3 電阻箱
0135-3 滑動變阻器
0136-3 轉柄電阻器
0137-3 定值電阻
0138-3 直線電橋
0139-3 演示用電流計
0140-3 懸圈電流計
0141-3 簡式正切電流計
0142-3 弧光燈
0143-3 電流的化學效應實驗器
0144-3 條形磁鐵
0145-3 蹄形磁鐵
0146-3 磁針
0147-3 磁分子模型
0148-3 鐵屑
0149-3 磁傾儀
0150-1 低氣壓放電管
0151-1 低氣壓放電管組
0152-1 示直進的陰極射線管
0153-1 示磁效應的陰極射線管
0154-1 示機械效應的陰極射線管
0155-1 示發生發光的陰極射線管
0156-1 倫琴射線管
0157-3 溫差電偶
0158-3 通電導體相互作用實驗器
0159-3 圓形電磁鐵
0160-3 蹄形電磁鐵
0161-3 電鈴
0162-3 電報機模型
0163-3 電話機模型
0164-3 左右手定則說明器
0165-3 楞次定律實驗器
0166-3 自感實驗器
0167-3 原副線圈
0168-3 感應圈
0169-3 可拆變壓器

Induction Cylinder
Cone-shaped Electric Conductor
Metallic Wire Netting Cover
Electrophorus
Influence Machine
Discharge Tongs
Variable Parallel Plate Condenser
Variable Condenser
Leyden Jar
Volta Cell
Lead Storage Battery
Resistance Box
Sliding Rheostat
Resistor, Arm Revolving
Constant Value Resistance
Straight Wire Bridge
Galvanometer for Illustration
Suspended Coil Galvanometer
Simple Tangent Galvanometer
Arc Lamp
Testing Apparatus For Current's Chemical Effect
Bar Magnet
Horse-shoe Magnet
Magnetic Needle
Magnetic Particle Model
Iron Filings
Dip Circle
Low Air Pressure Discharge Tube
Low Air Pressure Discharge Tube set
Straight Shot Cathode Ray Tube
Cathode Ray Tube for Magnetic Effect
Cathode Ray Tube for Mechanical Effect
Cathode Ray Tube for Fluorescence
Rontgen Ray Tube
Thermo-electric Couple
Testing device for Mutual Effect of charged conductors
Circular Electro Magnet
Horse-shoe Electric Magnet
Electric Bell
Telegraph Model
Telephone Model
Left hand and Right Hand Rules Indicator
Lenz's Law Apparatus
Self-induction apparatus
Primary and Secondary Coils
Induction Coil
Detachable Transformer

0170-3 萬用變壓器
0171-3 電機原理說明器
0172-3 手搖交流發電機
0173-3 四伏特電動機
0174-3 交流發電機電樞模型
0175-3 磁場轉動發電機說明器
0176-3 充電整流器
0177-3 示波器
0178-2 電共振演示器
0179- 兩極電子管
0180-3 三極電子管模型
0181-3 礦石收音機演示板
0182-3 單管收音機演示板
3 萬用電表

Universal Transformer
Dynamo Principle Illustrator
Hand driven A.C. and D.C. generator
Motor, 4 Volts
Model of Armature For A.C./D.C. Generator
Illustrator, Magnetic Field Rotary Dynamo
Charging rectifier
Oscillograph
Electric Resonator for Illustration
2-Electrode Electronic Tube
3-Electrode Electronic Tube
Illustrating Plate for Crystal Radio Receiving Set
Illustrating Plate for Single-tube Radio Receiving Set
Universal Electric Measuring Instrument

光學 OPTICS

0183-3 月地運行儀
0184-3 光具盤
0185-3 全反射演示器
0186-3 凹面鏡
0187-3 雙凹透鏡
0188-3 雙凸透鏡
0189-3 透鏡組
0190-3 三稜鏡
0191-3 直角三稜鏡
0192-3 顯微幻燈機
0193-3 幻燈反射裝置
0194-3 生物顯微鏡
0195-3 顯微鏡模型
0196-3 指示接目鏡
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原子結構學 ATOMIC STRUCTURE

0208-2 威耳遜雲室
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Wilson's Cloud Chamber
Spintharoscope

學生物理實驗儀器 STUDENT'S EXPERIMENT INSTRUMENTS

0220-2	支 架 天 平	Beam Balance
0221-1	長 方 體 組	Rectangular Blocks
0222-1	鉤 碼	Weights, with Hook
0223-1	金 屬 圓 柱 體	Cylindrical bodies, metal
0224-1	400 克 測 力 計	400 gm. Spring Balance
0225-1	摩 擦 計	Friction Tester
0226-1	槓 桿	Lever
0227-1	力 矩 盤	Disc of Moment of Force
0228-1	平 拋 實 驗 裝 置	Level throw Apparatus
0229-1	金 屬 球	Metal Ball
0230-1	小 型 水 銀 氣 壓 計	Small Mercury Barometer
0231-1	溫 度 計	Thermometer
0232-1	量 熱 器	Calorimeter
0233-1	玻 塞 耳 一 馬 略 特 定 律 實 驗 器	Boyle-Mariotte's Law Apparatus
0234-1	條 形 磁 鐵	Bar Magnet
0235-1	蹄 形 磁 鐵	Horse-shoe Magnet
0236-1	鐵 屑	Iron filings box
0237-1	導 線	Conductive Wire
0238-1	單 刀 開 關	Single Knife Switch
0239-1	電 阻 圈	Resistance Ring
0240-1	滑 動 變 阻 器	Sliding Rheostat
0241-1	電 磁 繼 電 器	Relay, Magnetic
0242-1	電 機 模 型	Dynamo Model
0243-1	銅 電 解 器	Electrolytic Cell, Copper
0244-1	簡 易 檢 流 計	Simple current Tester
0245-3	靈 敏 電 流 計	Sensitive Galvanometer
0245-3	直 流 安 培 計	D.C. Ampere-Meter
0246-3	直 流 伏 特 計	D.C. Voltmeter
0247-1	雙 凸 透 鏡 No. 1	Double Convex Lens, No. 1
0248-1	雙 凸 透 鏡 No. 2	Double Convex Lens, No. 2
0249-1	雙 凸 透 鏡 No. 3	Double Concave Lens, No. 3
0250-1	縫 屏	Slit Screen
0251-1	毛 玻 璃 小 光 屏	Ground-glass Screen; small
0252-1	方 格 小 光 屏	Cross Mesh Screen, small
0253-1	光 源 架	Stand of Light Source Lamp
0254-1	小 平 面 鏡	Small Plane Mirror
0255-1	玻 璃 磚	Glass Brick
0256-1	方 座 夾	Square Base Support
0257-1	複 夾	Compound Clamp
0258-1	燒 瓶 夾	Flask Clamp
0259-1	鐵 環	Iron Ring
0260-1	鐵 圈	Iron Hoop
0261-1	刻 度 尺	Scale
0262-1	三 角 尺	Triangular Meter
0263-1	量 角 器	Angle Gauge
0264-1	量 筒	Measuring Cylinder
0265-1	酒 精 燈	Alcohol Lamp

生物模型·標本·顯微鏡切片

BIOLOGICAL MODELS, SPECIMENS MICROSCOPIC SLIDES

I 古生物模型 PALEOLOGICAL MODELS

0290	馬 足 進 化 模 型	Evolutional steps in horse's leg
0291	草 食 恐 龍 模 型	Herbaceous dinosaur
0292	肉 食 恐 龍 模 型	Carnivorous dinosaur
0293	始祖鳥化石及復原模型	Fossil and restored figure of Archeornis

II 植物模型 BOTANICAL MODELS

0295	雙 子 葉 植 物 莖 模 型 (根 本)	Dicot Stem
0296	根 的 縱 切 模 型	Root
0297	葉 的 縱 橫 斷 面 模 型	Dicot leaf
0298	小 麥 花 模 型	Wheat flower

III 動物模型 ZOOLOGICAL MODELS

0300	反 芻 胃 (牛 胃) 模 型	Ruminant stomach of ox
0301	水 螅 縱 斷 模 型	Hydra
0302	有 鉤 絲 蟲 生 活 史 模 型	Life history of tapeworm (Hooked)
0303	草 履 蟲 模 型	Paramecium

IV 生理模型 HUMAN ANATOMICAL MODELS

0306	人 體 骨 骼 模 型	Human skeleton
0307	人 體 半 身 內 臟 解 剖 模 型	Dissection of Human Trunk with head
0308	眼 解 剖 模 型	Dissection of eye
0309	牙 解 剖 模 型	Dissection of teeth
0310	腦 解 剖 模 型	Dissection of brain
0311	皮 膚 模 型	Skin
0312	心 臟 解 剖 模 型	Dissection of heart
0313	耳 解 剖 模 型	Dissection of ear
0314	喉 頭 解 剖 模 型	Dissection of larynx
0315	泌 尿 系 統 模 型	Urinary system
0316	消 化 系 統 模 型	Digestive system
0317	呼 吸 系 統 模 型	Respiratory system

V 骨 骼 標 本 SKELETONS

0321	魚 骨 骼	Carp (or Silver Carp) skeleton
0322	龜 骨 骼	Turtle skeleton
0323	鴿 骨 骼	Pigeon skeleton
0324	蛙 骨 骼 (蟾 蜍 骨 骼)	Frog (or Toad) skeleton
0325	蝙 蝠 骨 骼	Bat skeleton
0326	兔 骨 骼	Rabbit skeleton
0327	猴 骨 骼	Monkey skeleton

VI 浸制解剖標本 PRESERVED AND DISSECTED SPECIMEN

0328	鯽魚解剖	Dissection of Carp (or Silver carp)
0329	青蛙(或蟾蜍)的解剖	Dissection of Frog (or Toad)
0330	龜內臟解剖	Dissection of Turtle
0331	鴿的解剖	Dissection of Pigeon
0332	兔的解剖	Dissection of Rabbit
0333	兔生殖排泄系統	Excretory and Reproductive System of Rabbit
0334	兔呼吸循環系統	Respiratory and Circulatory organs of Rabbit
0335	脊椎動物五綱的腦解剖	Comparison of Brains in the five species of Vertebrates
0336	鯽魚神經系統	Nervous System of silver carp
0337	青蛙(或蟾蜍)的神經系統	Nervous System of Frog (or Toad)
0338	兔的神經系統	Nervous System of Rabbit
0339	鴿的神經系統	Nervous System of Pigeon
0340	蛙的發育順序	Development of Frog
0341	蚌的內部構造	Dissection of clam
0342	蚯蚓解剖(示內臟)	Dissection of Earthworm
0343	蚯蚓解剖(示神經系統和生殖系統)	Nervous and reproductive organs of Earthworm
0345	馬賊解剖示內臟	Dissection of Slug

VII 浸制示範標本 PRESERVED DEMONSTRATION SPECIMENS

0346	海月水母	Jellyfish (Aurelia aurita)
0347	海馬	The sea-horse (Hippocampus)
0348	蛔蟲外形(示雄雌)	Ascaris lumbricoides, male and female
0349	螺	Salamander
0350	蝸牛	Snail
0351	海星	Starfish
0352	海參	Trepang
0353	比目魚	Flatfish
0354	蜥蜴	Lizard
0355	蜈蚣和馬陸	Scolopendrid and milli pede
0356	狗獾	Esox lucius
0357	蟻	Tapeworm (Taenia sp.)

VIII 剝制標本 MOUNTED SPECIMENS

0358	野鴨(♀)	Wild duck, female
0359	野鴨(♂)	Wild duck, male
0360	啄木鳥	Woodpecker
0361	蒼鷹	Hawk
0362	貓頭鷹	Owl
0363	鴿	Pigeon
0364	北京鴨	Peking duck
0365	蝙蝠	Bat
0366	松鼠	Squirrel
0367	鼹鼠	Mole

IX 昆蟲標本 INSECTS

0369	蝗蟲生活史	Life history of Grasshopper (Locusta migratoria)
0370	菜粉蝶生活史	Life history of the Cabbage butterfly (Pieris rapae L.)
0371	柞蠶生活史	Life history of the Chinese oak silkworm (Antheraea Pernyi Guesin)
0372	蜜蜂生活史	Life history of Honey-bee (Apis mellifera L.)
0373	蠶蛾生活史	Life history of Silkworm (Bombyx mori L.)
0374	蠅的生活史	Life history of Fly (Musca domestica)
0375	螟蛾生活史	Life history of Corn borer (Pyrausta nubilalis Hubner)
0375	竹節蟲	Walking-stick (Diapheromera orientalis)
0376	枯葉蝶	Leaf butterfly

X 顯微鏡玻片標本 MICROSCOPIC SLIDE SETS

BZ 25	動物學	Zoology	25	pcs.	set
BZ 50	"	"	50	"	"
GB25	植物學	Botany	25	"	"
GB50	"	"	50	"	"
GH25	生理組織學	Physiology & Histology	25	"	"
GH50	"	"	50	"	"
PH 12	寄生蟲學	Parasitology	12	"	"
PH 25	"	"	25	"	"
BS 25	生物學	Biology	25	"	"
BS 50	"	"	50	"	"
BM25	初中示範教	Assorted set for Junior Middle School	25	"	"
BM50	"	"	50	"	"

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1. Radio Equipments:

RADIO RECEIVER: 5-tube super-heterodyne radio receiver with medium and short wave bands in beautiful bakelite and/or veneer wood cabinet, having the best features of high sensitivity and selectivity giving a perfect tonal reproduction. Power supply: 110/220 volts A.C. 50 cycles.

Radio Accessories:

P.M. Loud Speakers: 5", 6 $\frac{1}{2}$ " and 8".

Radio Tubes: 6SA7GT, 6SK7GT, 6SQ7GT, 6V6GT, 5Y3GT.

I.F. Transformer: Air Core. Iron Core.

Radio Coils: Antenna, OSC., R.F. Long and short wave coils.

Tubular Paper Condensers: 0.0001, 0.00025, 0.0005, 0.001, 0.002, 0.005, 0.006, 0.01, 0.02, 0.05, 0.1, mfd.

Dry Electrolytic Condensers: 8, 25, 30, mfd.

Variable Condensers: 2-gang, 3-gang. .00035 mfd.

Compound Radio Batteries: A-battery 1.5 v. 3.9 ohm.
B-battery 91.2 v. 4800 ohm.

Toggle Switches: S.P.S.T. S.P.D.T. D.P.S.T. D.P.D.T. and Push button switch.

Head Phone: 3000 ohm.

Other Parts: Phone plug and jack, 8-prong sub-panel socket, Crystal unit and detector. Padding condenser.

Soldering Irons: 20-45-75-100-150. W. 110 V. or 220 V.

Resistors: Wire wound or carbon.

Phono Equipments:

Automatic record changer with magnetic pickup, can be supplied with or without Amplifier, 110 or 220 V. AC. 50 cycles.

Electric Record Player with magnetic pickup, 110 or 220 V. AC. 50 cycles.

Permanent Magnet pickup cartridges.

Public Speech Power Amplifiers: 15 W. 25-30 W. with or without medium & short wave receiving equipments.

Microphones: High impedance with the dynamic or ribbon.

Tape and Wire Recorders.

2. Photographic Equipments for Photo Studio:

Studio Portrait Camera,	No. 8 for	6 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ "	Negatives
Complete Outfit:	No. 12 "	10" x 12"	"
Portable View Camera,	No. 4 "	3 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ "	"
Complete Outfit:	No. 6 "	4 $\frac{1}{2}$ " x 6 $\frac{1}{2}$ "	"
	No. 8 "	6 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ "	"
	No. 10 "	8" x 10"	"
	No. 12 "	10" x 12"	"

Photographic Enlarger: No. 4 for negatives up to 3 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ "
No. 6 for negatives up to 4 $\frac{1}{2}$ " x 6 $\frac{1}{2}$ "

Retouching Cabinet: No. 8 for 6 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " negatives
No. 12 for 10" x 12" negatives

Spot Lights: 6" or 8" Condenser, 750W-1000W.
with or without Revolving Disc.

Glossy Print Dryer, single or double side: Size: 11" x 14"
Power Consumption: 1000W, 110 or 220V. 14" x 18"
18" x 24"

Photo-Flood Light-units: 1, 2, 3, 4, 5, 6-light units of different types.

Universal Tripod: Overall dimensions 46"

Range of elevation 20"

Universal Adapter: No. 4 for Negative of 3 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ "

No. 6 for Negative of 4 $\frac{1}{2}$ " x 6 $\frac{1}{2}$ "

Special kits are provided for. Capable of taking pictures of different sizes at different intervals.

Universal Film Adapter: Specially made for No. 120 or 620 Films.
Capable of taking 11 Exposures. Kits are also provided for exposures of half and quarter sizes.

Printing Frames, all sizes.

Negative Drying Racks, all sizes.

Contact Printers, all sizes.

Negative Holders, all sizes.

Photographic Contact Printing & Enlarging Paper.

Photographic Carbon: 13 x 305 mm.

3. Electrical Measuring Instruments:

Precision AC/DC Ammeters and Voltmeters, portable.

Accuracy $\pm 0.5\%$, 12 Ranges, Dimension 264 x 216 x 158 mm.

Precision Single and Three Phase Wattmeter, portable.

Accuracy $\pm 1\%$, 24 Ranges, Dimension 264 x 261 x 147 mm.

Precision Single and Three Phase Power Factor Meter, portable.

Accuracy Cos. 1 ϕ , 9 ranges, Dimension 201 x 261 x 147 mm.

Precision Cycle Counter, portable.

Rated Voltage: 110-220 Volts, Dimension 175 x 155 x 100 mm.

Precision Resistance Tester (Megohmmeter), portable.

Measuring ranges 0-20-200 Megohms, Dimension 255 x 210 x 205 mm.

Precision Kelvin Bridge; Wheatstone Bridge; Potentiometer.

Capacitance Box; Resistance Box; portable.

Switchboard Voltmeter, Ammeter; AC/DC 4", 7" and other sizes.

Switchboard Power Factor Meter, Wattmeter.

Household Current Meter.

4. Cinematographic Equipments:

16 mm. Sound Film Projector. Complete with accessories.

Slide Projectors.

Cinema Carbons: H.I. or L.I. 8 x 305 mm, 7 x 230 mm, 7 x 305 mm.
6 x 230 mm. Other sizes made to order.

Projection Lamps.

Exciter Bulbs.

5. Telephone Equipments:

Desk and Wall Telephones.

Automatic Telephone Equipments.

Telephone Equipments, Common Battery System.

Switchboards.

Alarm Receiving & Despatching Apparatus.

6. Scientific Instruments:

Yarn Tensile Strength Tester for Single Yarn.

Cotton Drawing Apparatus | For Cotton Maturity, Length and
Cotton Sorter | Fineness Tests.

Motor Driven Lap Meter.

Motor Driven Wrap Reel.

Cloth Strength Tester (Hydraulic Type).

Lea Yarn Strength Tester (Hydraulic Type).

Roving & Sliver Tester (Motor Driven).

Shirley Analyzer.

Twist Tester.

CO₂ Analyzer with Remote Control and Multi-Indication Meter.

Flowmeter, Electrical and Mechanical, with Remote Control and
Automatic Recording Devices, for Gases and Liquids.

Water Meter.

Planimeter: For Calculation of Areas of Plane Figures.

Pyrometers: Thermo-Couple and Optical.

Metallurgical Microscope.

Micro Projection Equipments.

7. Laboratory Equipments:

A. Analytical and Precision Balances:

Analytical Balances:

1. Single Pan Projection Reading:
Capacity: 100 gms.
Accuracy of Weighing: by difference
within the Optical Range: 0.05 mg.

2. Automatic Projection Reading with
Air-Damping Device for rapid and reliable weighing.

Capacity: 200 gms.
Sensitivity: 0.1 mg.

Precision Balances:

for Schools and Laboratory Experiments.
Sensitivity from 0.4 to 20 mg.

- B. Glass and Porcelain Laboratory Apparatus.
- C. Chemical Thermometers, all kinds.
- D. Magnifiers: 2x to 20x.
- E. Hydrometers.
- F. Spirit Levels.

8. Educational Equipments:

Physics Appliances for Schools.

Anatomical and Biological Models.

Biological Microscopes: 675x, 1500x.

Biological Dissecting Microscopes: 20x.

Biological Microscopic Slides.

Precision Drawing Instruments: 4 - 28 pcs. per set.

3-Purpose Compass.

Mathematical Instrument set,

Comprising, of 1 3-purpose

Compass, 1 Plastic protractor

and 1 pair of plastic

Triangles.

For Junior Schools.

Terrestrial Globes.

9. Office Appliances:

Calculating Machines.

Chinese Typewriter (Universal) and Accessories.

Household Thermometers. Wall, Dry and Wet, Max. and Min.

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION

27 Chungshan Road (E. 1),
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Biological Microscopic Slides.

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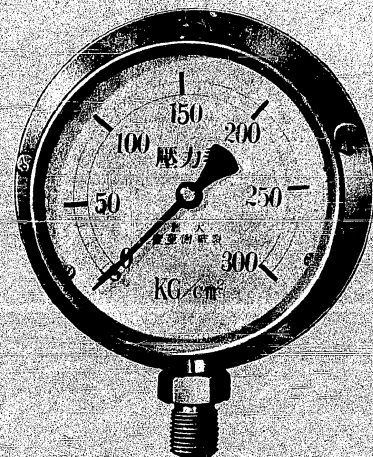
(Head Office at Peking, Branch Offices
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25

壓力表說明書

STAT

PRESSURE GAUGE CATALOGUE



中國 旅行度量衡儀器廠出品

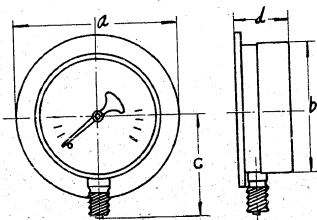
CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION

GENERAL USE: Precision pressure measuring apparatus for steam boilers of all sizes, vehicle oil compressors, air compressors etc. The measurement result can be easily read by the scales indicated.

APPLICATIONS: A. Suitable for measuring pressure of slow flow and even liquid and atmosphere, but not suitable for measuring explosive matters and crystallized substances.

B. The temperature of the liquid and atmosphere to be measured should range from -20°C to 60°C .

PARTCUAPS:



(unit=mm)

fixed specifications (Diameter)	a (dia)	b (dia)	c	d
60	—	60	51	36
75	98	79	59	41
100	126	102	76	41
125	155	128	127	49
150	180	154	127	48
250	—	256	161	54

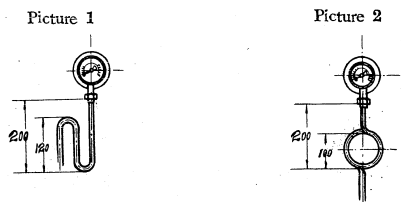
MAIN SPECIFICATIONS

specification of outside circumference (unit:mm)				minimum degreeind- icated	Distance between two indicated degrees	Permissible pressure	Permis- sable tolerance (±)
60	75~100	125~150	250				
Pressure limit							
Unit: Kg/cm ²							
0.5	0.5	—	—	0.02	0.1	0.34	1/2 of the smallest indicated degree
1	1	—	—	0.05	0.2	0.7	
2	2	2	—	0.05	0.5	1.35	
3	3	3	—	0.1	0.5	2	
4	4	4	—	0.1	1	2.7	
5	5	5	—	0.2	1	3.4	
6	6	6	—	0.2	1	4	
7	7	7	—	0.2	1	4.8	
8	8	8	—	0.2	2	5.4	
10	10	10	10	0.5	2	7	
12	12	12	12	0.5	2	8	
16	16	16	16	0.5	2	11	
20	20	20	20	0.5	5	13.5	
25	25	25	25	1	5	17	
30	30	30	30	1	5	20	
35	35	35	35	1	5	24	
40	40	40	40	1	10	27	
50	50	50	50	2	10	34	
60	60	60	60	2	10	40	
80	80	80	80	2	10	54	
100	100	100	100	5	20	70	
120	120	120	120	5	20	80	
160	160	160	160	5	20	110	
200	200	200	200	5	50	135	
250	250	250	250	10	50	170	
—	300	300	300	10	50	200	
—	—	400	400	10	50	270	
—	—	500	500	20	100	340	
—	—	600	600	20	100	400	
—	—	800	800	20	100	540	
—	—	1000	1000	50	200	700	
—	—	—	—	—	—	—	

INSTALLATION:

- A. If the gauge is to be installed near the boiler with a surface temperature within 100°C . It should be equipped with curved tubes.
- B. Should the surface temperature be over 100°C , tubes of proportionate length is to be installed.
- C. The distance from the surface of the gauge to the boiler should be 250-300mm.

POSITION OF INSTALLATION



- REMARKS: A. Performance under even pressure loading, pressure is allowed to the extent to $2/3$ of the pressure limit.
- B. Performance under unsteady pressure loading, pressure is allowed to the extent of $1/2$ of the pressure limit.
- C. If the performance of air pressure gauge is to be over 100 kg/cm^2 , oils should not be emerged into the tube, but this is not applicable to oil compressors.

中國工業品出口公司天津分公司

CHINA NATIONAL INDUSTRIAL

PRODUCTS EXPORT CORPORATION TIENTSIN BRANCH

中國天津六區建設路171號

171 CHIEN SHEH ROAD

TIENTSIN (6) CHINA

CABLE ADDRESS: 9005 OR "INDUSTRIAL"

產品目錄

1956

國營北京瀋陽南京科學儀器廠
聯合銷售處

北京營業部 — 北京市八面槽大街61號
電話: 5-2505 電報掛號: 9440

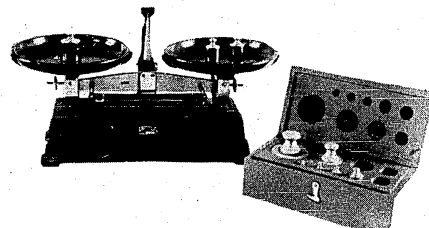
上海營業部 — 上海市南京東路423號
電話: 93414 電報掛號: 32602

物理演示儀器

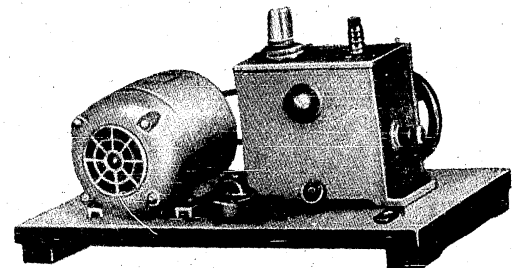
國營北京、瀋陽、南京科學儀器廠聯銷處

1

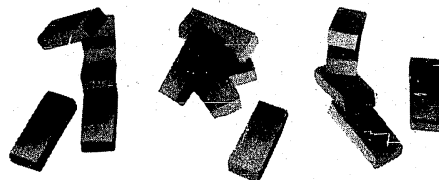
通用儀器



0002—2



0008—1



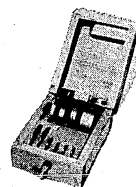
0001—2



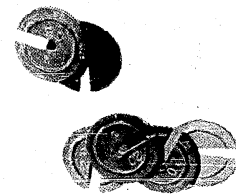
0006—2



0004—2



0003—2



0005—2

0001—2 長方體組

用鐵、鋁、鋅三種金屬製成，每種五塊，體積為 $5 \times 2 \times 1$ 厘米。

0002—2 受皿天平

秤量 2000 克，全感量 1 克，附砝碼一盒。

0003—2 槽碼

1—200 克，其中包括：1 克、5 克、20 克、50 克、200 克各一個，2 克、10 克、100 克各二個，共重 500 克，裝於木盒內。

0004—2 槽碼

1—500 克，其中包括：1 克、5 克、20 克、50 克、200 克、500 克各一個，2 克、10 克、100 克各二個，共重 1000 克裝於木盒內。

0005—2 槽碼

鑄鐵製，直徑 32 毫米，每個 20 克，共 6 個。

0006—2 槽碼盤

鑄鐵製，每個 20 克，每組 6 個。

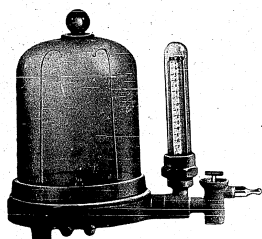
0007—1 皮唧

又名足鞣或皮老虎，供打氣使用。

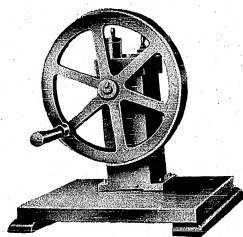
0008—1 電動抽氣機

二級轉動的真空抽氣機，抽氣能力 $4M^3/h$ 真空度 10^{-4} 毫米水銀柱高，用 220 伏特電源。

通用儀器



0010—1



0009—1

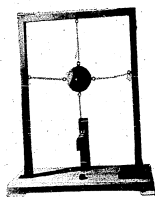
0009—1 手搖抽氣機

科莫夫斯基式，抽氣和壓縮空氣兩用，抽氣程度能達到 0.3 厘米水銀柱高；壓縮空氣程度能達到四個大氣壓。

0010—1 帶壓強計抽氣室

室為銅鑄製，直徑 235 毫米，帶水銀壓強計，和手搖抽氣機及所要抽氣的儀器（如馬德堡圓盤等）連用以檢示抽真空程度。另附玻璃鐘罩，用以做電鈴真空不傳音實驗。

力學



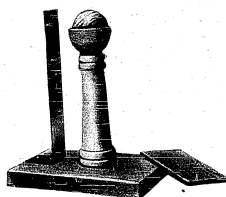
0011—2

0011—2 慣性球

在木框的中心懸掛木球一個，球徑 100 毫米。

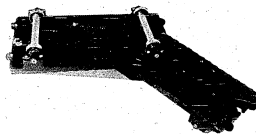
0012—2 慣性實驗器

木座中心具有托球支柱，柱側有彈性鋼片一個，附一木球，球徑 25 毫米。



0012—2

力學



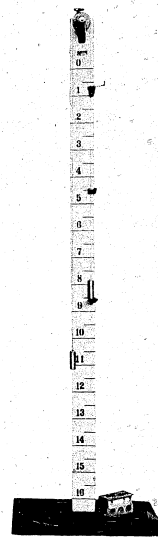
0014—2



0015—2



0016—1



0017—2

0013—2 牛頓第二定律實驗裝置

落槌式，演示自由落體運動的裝置，三角鐵製的支架固定在木質座上，在座上安有 50 瓦電動機（帶轉速計）一台，另有金屬製落槌一根，徑 25.4 毫米，長 100 厘米，電源 6 伏特，備有電鍵控制電動機。

0014—2 平板小車

銅鑄製小車兩個，四輪用軸承製，車身長 345 毫米，寬 216 毫米。

0015—2 反衝水力機模型

玻璃製，裝在鐵座支架上，全高 46 厘米。

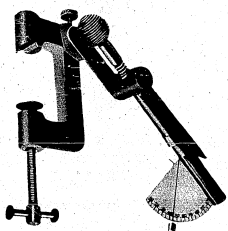
0016—1 牛頓管

又名“毛錢管”，管長 120 厘米，徑 6 厘米，內裝鉛塊、軟木塊和羽毛。

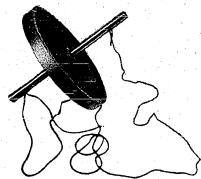
0017—2 簡單阿特武德機

木座上裝有頂端帶滑輪的立木板（高 186 厘米），立板有自上而下的標度，每標度為 5 厘米。座上安有調節水平螺旋，附有釋放台夾、承磁嘴夾及托板夾各一個，帶繫繞三節重錘二個，長槽碼三個（2 克、4 克、6 克），元槽碼七個（2 克二個，1 克四個，0.5 克一個）。

力 學



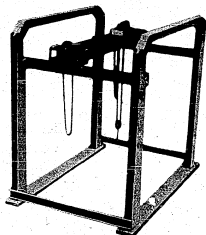
0018—2



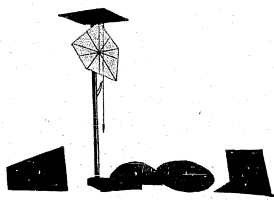
0019—2



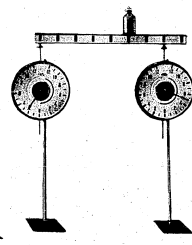
0019—2



0020—2



0023—2



0022—2

0018—2 演示拋物線器

投射管裝在桌夾上，在投射管上安有測角器，可固定於任何角度，附鐵球一個（徑 25 毫米）。

0019—2 平拋和自由落體等時實驗器

木板上裝有彈片和擺錘，附木球二個（徑 30 毫米）。

0020—2 吊車模型

雙梁模式，由起重吊車、滑軌、台車和差動滑車等組成。

0021—2 麥克斯韋滾擺

鑄鐵製，輪徑 11 厘米，軸長 14 厘米。

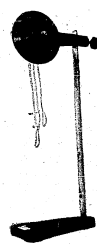
0022—2 圓形測力計

盤徑 22 厘米，秤量 1200 克，感量 100 克，附：梁尺 1 個，支角 2 個，支盤 2 個，滑輪 2 個。
可做梁的載重力、力的合成與分解、測重量、平行四邊形定理、槓桿平衡條件、阿基米德原理等實驗。

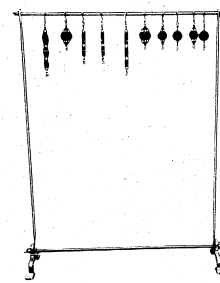
0023—2 重心板

不同形狀的金屬板七塊，附鐵支架一個及重鐵錘一個。

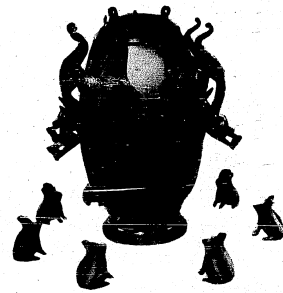
力 學



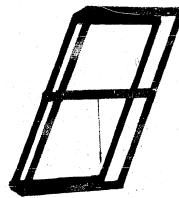
0028—2



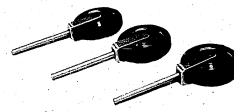
0027—2



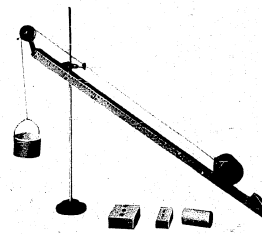
0025—2



0024—2



0026—2



0029—2

0024—2 物體穩度演示器

用鐵板鉚合的活動框架，高 28 厘米，寬 19.5 厘米，長 15 厘米，中層板的中心吊一重鐵錘。

0025—2 候風地動儀模型

仿我國漢代天文學家張衡發明的地動儀製成的。圓桶形表面上均勻分佈八條龍，龍頭分向八方，在八個龍頭的下面裝有八隻仰頭張嘴的蛙，每個龍含球一個，桶內中心立有重心穩度較小的支桿一個，當某一方向受震動時，立桿倒向相對方向碰擊龍頭彈簧，龍嘴脫口球即下落至蛙的嘴裏。

0026—2 滑輪

金屬柄（長 60 毫米）一端裝有電木滑輪，一套三個。

0027—2 滑輪組

單滑輪、串列滑輪、串連滑輪、組合滑輪各二個，演示滑輪在各種組合下對力的節省不同，可做物體舉重實驗用。

0028—2 輪軸

金屬支桿，裝有電木製三級輪軸，輪徑各為 30、60、90 毫米，每級輪有小孔以便繫繩，輪軸有活動卡子，可以拆下裝於其他支桿上使用。

0029—2 斜面附滑輪

又名“斜面儀”，木製斜面板，長 70 厘米，寬 12 厘米，附木塊。

力 學



0032—2



0035—2



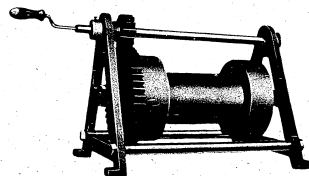
0034—2



0031—2



0030—2



0033—2

0030—2 螺旋模型

電木製，凸形螺旋徑30.5毫米，長152.4毫米，螺母由正中縱剖二個半面，用以說明螺旋的構造。

0031—2 螺旋壓榨器

銅鐵製，有效壓榨厚度80毫米。

0032—2 螺旋舉重器

銅鐵製，由螺旋軸（徑24.4毫米）、底座和扳桿等構成，用以說明螺旋舉重的道理，可舉重物500公斤。

0033—2 捲揚機模型

又名“搞車”，兩個鋼鐵A字形架的中間，裝有滾筒（徑75毫米，長135毫米）和電木製的齒輪，齒輪比14:46，附搖柄。

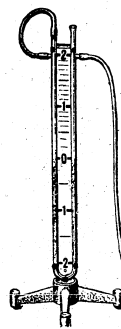
0034—2 雙合劈

圓形木劈（徑10厘米，高15厘米）附劈角一個，角為30°。

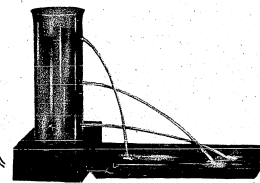
0035—2 球軸承模型

電木製，徑12厘米，可剖開視內部構造。

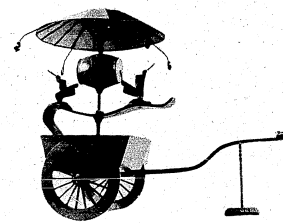
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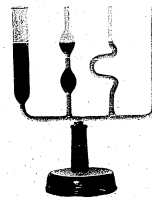
0041—1



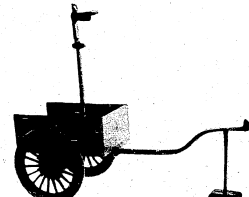
0039—1



0036—2



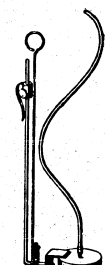
0042—1



0037—2



0038—1



0040—1

0036—2 記里鼓車模型

車體木製，電木製齒輪。

0037—2 指南車模型

車體木製，電木製齒輪。

0038—1 帕斯卡定律演示器

吸上端筒一端裝金屬空球，空球表面有許多小孔。

0039—1 側壓演示器

玻璃筒，高35厘米，徑7厘米，側壁帶三孔。

0040—1 液體內部壓強實驗器

金屬空圓盒，一面繫膠皮薄膜，用鉤子掛盒，盒可隨意轉動，有掛鉤可將儀器掛在容器的沿上，以便調整入水深度，和微小壓強計連用，作液體內部壓強實驗用。

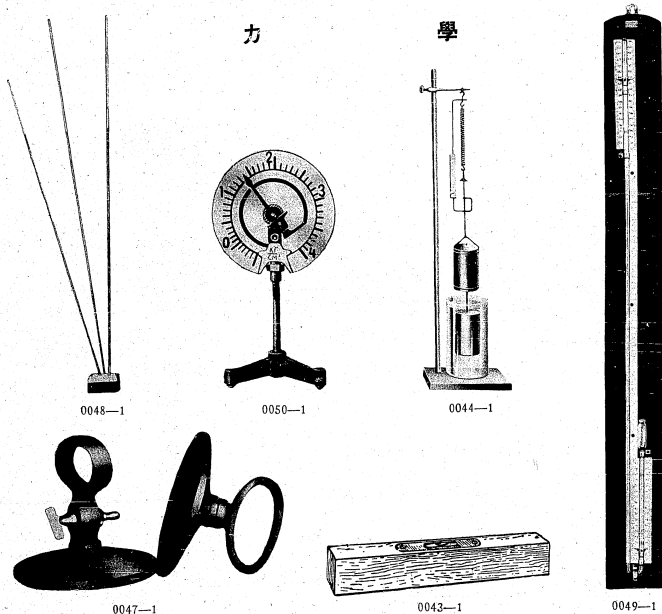
0041—1 微小壓強計

U形側管固定在帶標度木板上，附玻璃製三通管一個，供測量微小壓強用，如：演示液體內部壓強和熱輻射及空氣的熱膨脹等實驗。

0042—1 連通管

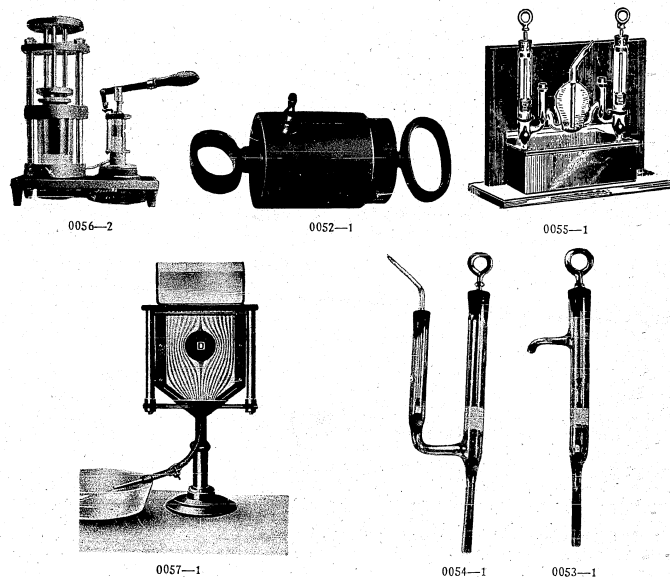
四個形狀不同，截面不同的玻璃管底部以水平玻璃管連通，固定在木座上。

力 學



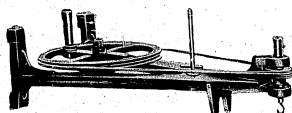
- 0043—1 水準器
長方形木塊，中部裝有氣泡水準。
- 0044—1 阿基米德定律實驗器
同容積的小提筒和圓柱體組成，並附彈簧測力計一個。
- 0045—1 液體比重計
玻璃製，比重小於水。
- 0046—1 液體比重計
玻璃製，比重大於水。
- 0047—1 馬德堡圓盤
又名“馬德堡半球”，鑄鐵製，外徑 124 毫米，內徑 95 毫米，抽真空達到 3 毫米水銀柱高時，用 90 公斤的力方能拉開。
- 0048—1 托里拆利管
一端封閉的玻璃管長 98 厘米，內徑 0.4、0.5、0.7 毫米各一根，附鑄鐵製水銀槽。
- 0049—1 曲管氣壓計
簡單形，木板上固定有刻度尺和 U 形玻璃管，附水銀 200 克。
- 0050—1 金屬壓強計
金屬扁管裝在具有圓形標度盤和指針的支架上，可測 0—4 個大氣壓。

力 學

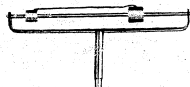


- 0051—1 無液氣壓計
- 0052—1 氣體彈性實驗器
又名“格里克氣筒”，由鑄鐵製的氣筒和氣柱組成，氣柱斷面積 50 平方厘米。用來演示大氣壓力的作用，並可做氣體彈性、水壓機和氣體壓力傳遞等實驗。
- 0053—1 空吸抽機
又名“吸上唧筒”，玻璃製，活瓣用顏色玻璃製，可以清楚地看到活瓣的動作。
- 0054—1 壓力抽機
又名“壓迫唧筒”，玻璃製，活瓣用顏色玻璃製，可以清楚地看到活瓣的動作。
- 0055—1 救火機模型
全玻璃製，活瓣用棕色玻璃製，兩側為壓力抽機，中央為氣室。
- 0056—2 水壓機模型
唧筒和水缸玻璃製成，可舉重 80 公斤。
- 0057—1 流體流線演示器
金屬板兩面嵌玻璃板，兩板中間隔 1 毫米，頂部裝有帶小孔的水槽二個，附各形板片 6 個。玻璃中間放入板片，用清水和帶顏色的水分別注入兩個水槽，以演示形成流線的現象。

力 學



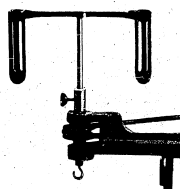
0061-1



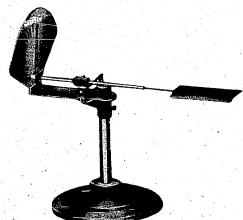
0060-1



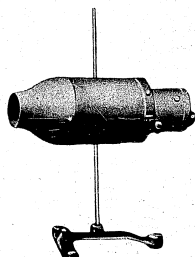
0064-1



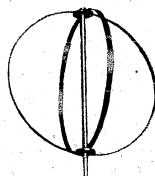
0063-1



0059-1



0059-1



0062-1

0058-1 噴霧器

0059-1 空氣動力秤

秤架帶標度盤和指針，帶吹風裝置，附 8 個形狀不同而截面相同的物體和 2 個飛機翼的斷面型板。

0060-1 向心力實驗器

鐵架的橫桿上裝有兩個大小不同的金屬圓柱，大圓柱 40 克，小圓柱 20 克，須裝在離心機上使用。

0061-1 離心機

鋁鐵架，臥立兩用，用以轉動各種離心儀器，如：向心力實驗器、彈性圓環、離心分液器、離心分離器、離心乾燥器、離心節速器等。七色板、發音齒輪、發音板等亦可用它來轉動。

0062-1 彈性圓環

又名“離心環”，金屬製彈簧環二個，裝在金屬圓軸上。

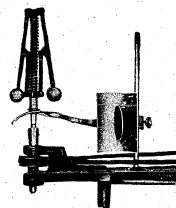
0063-1 離心分離器

金屬橫桿，桿兩端懸掛鐵板製帶條形縫的圓筒，附沉澱用的玻璃管。

0064-1 離心分液器

球形玻璃容器，帶底托和支撐。

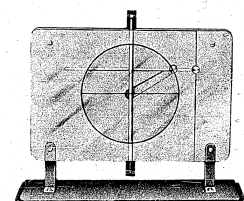
力 學



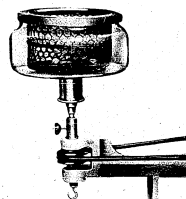
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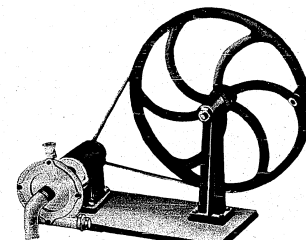
0067-1



0070-1



0065-1



0069-1



0071-1

0065-1 離心乾燥器

玻璃缸和多孔容器組成。

0066-1 離心節速器

包括調速球和節氣閥剖面，裝在離心機上使用。

0067-1 離心道軌

金屬絲彎成圓形軌道，附金屬球一個。

0068-1 轉速計模型

0069-1 離心抽水機構造模型

透明式，金屬輪翼，裝入透明之金屬圓壳內，壳中心有進水管，壳側壁有出水管，輪翼軸具有皮帶輪，用皮帶與手搖輪相連，附水槽。

0070-1 簡諧振動演示器

由裝在直立鐵板上的可以沿圓周運動的拐軸和可以上下移動的拉桿及帶圖線的玻璃板組成。

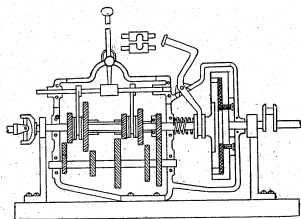
0071-1 鐘擺模型

由鐘擺、齒輪和機械裝置組成，裝於鐘三足支座上。

力 學



0072—1



0074—2



0076—2

0072—1 縱波橫波說明器

木箱的正面壁上開十九條垂直縫，背面一條水平縫，箱內裝有觀子和可捲於其上的帶波形的布帶，並裝有40W的電燈二盞。

0073—2 力學共振演示器

木架(高40厘米，寬30厘米)，懸木球四個。

0074—2 齒輪調速器

金屬製，汽車變速箱的剖面，長25厘米，寬10厘米，高20厘米。

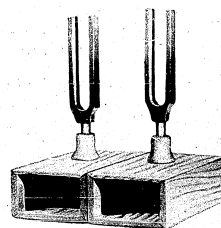
0075—2 水輪機模型

鋁製，水輪徑80毫米，厚20毫米，附有水箱。

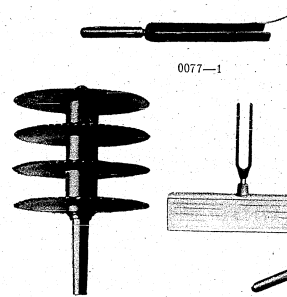
0076—2 風力發動機模型

塔形鐵架，裝有三葉風輪，輪徑50厘米。

聲 學



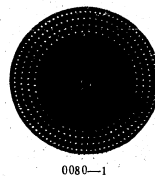
0079—1



0077—1

0081—1

0078—1



0080—1



0083—1



0082—1

0077—1 示振音叉

鐵板製，帶示振尖，頻率60~120赫茲，演示簡諧振動圖線(正弦曲線)用。

0078—1 音叉

鋼製，頻率256赫茲，附音叉箱、橡皮槌。

0079—1 音叉

鋼製，頻率440赫茲，包括音叉一對，音叉箱二個，橡皮槌二個。

0080—1 驗音盤

鐵板製，四排小孔頻率為48、60、72、96赫茲，附吹咀一個，須裝在離心機上使用。

0081—1 發音齒輪

金屬製，齒輪四片共裝在一軸上，齒數各為40、50、60、80，須裝在離心機上使用。

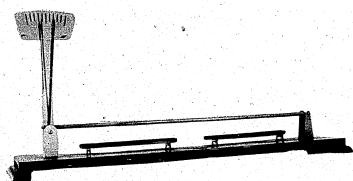
0082—1 共鳴器

又名“姆霍茲共鳴球”，玻璃製，頻率440赫茲。

0083—1 絃音計

共鳴箱長85厘米，一端裝有滑輪，附直徑不同的金屬絃三根和琴弓一個。

分子物理學和熱學



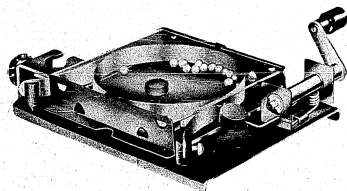
0089—2



0084—1



0087—2



0085—1



0086—1

0084—1 擴散實驗器

多孔素燒容器，具有電水嘴。

0085—1 布朗運動說明器

鐵框架(150×120毫米)上裝有彈性鋼片製成的圓形環(徑70毫米)，兩面嵌方形玻璃板，中間放鋼珠數十粒及橡皮塊一個。用幻燈可映於銀幕，效果明顯。

0086—1 內聚力實驗器

具有繫鉤的鉛圓柱體二個。

0087—2 機械能變熱能演示器

又名“功熱互變實驗器”弓形桌夾上裝有黃銅管，附絨繩一條。

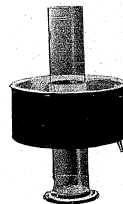
0088—2 熱功當量實驗裝置

焦耳式，木架金屬圓筒架減磨輪，內部裝一個可以轉動的豎直軸帶有葉片，圓筒內壁上有固定葉片，附尺二個，重錘二個。

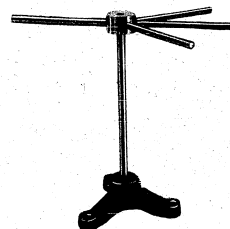
0089—2 線膨脹演示器

銅、鐵棒各一支，長60厘米，兩端有固定支架，一端支架上有標度板和二個指針，中間置酒精槽二個。

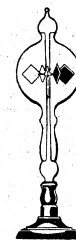
分子物理學和熱學



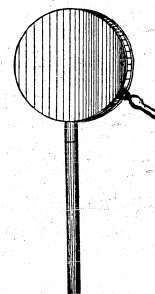
0094—1



0092—2



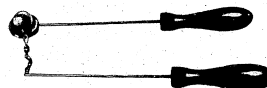
0095—1



0096—1



0091—2



0090—2



0093—2

0090—2 體膨脹演示器

手持式，銅球(徑25毫米)和銅環各一個，各裝於二根金屬柄上，柄長193毫米。

0091—2 雙層金屬片

又名“銅鐵鉚合板”，銅板和鐵板鉚合而成，一端具有標度板 and 指針。

0092—2 熱傳導比較器

金屬支桿頂端裝有加熱棍和銅、鐵、鋅三種傳熱試棍各一根，附鋼球9個。

0093—2 固體縮力演示器

鐵製，有效拉力距離295毫米。

0094—1 水的最大比重演示器

又名“水的最大密度演示器”，“水的反常實驗器”。玻璃筒腰部具有金屬寒劑槽。

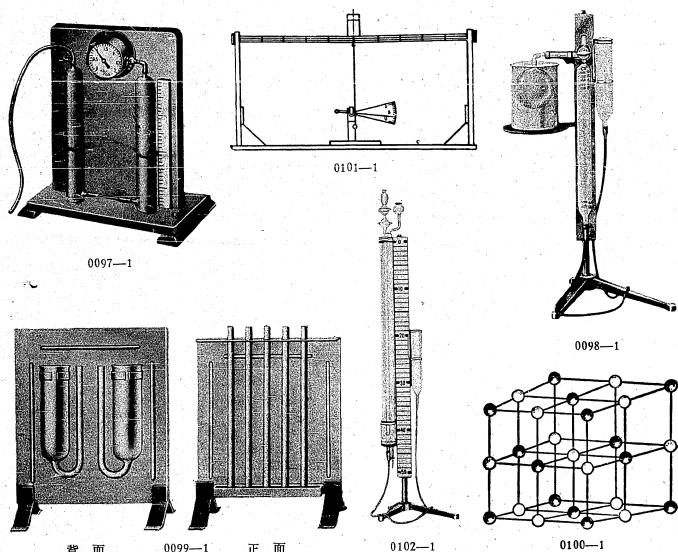
0095—1 輻射計

真空玻璃球(徑8厘米)，內有自由活動軸，軸上裝四枚一面白一面黑的稜形翼片。

0096—1 熱輻射演示器

黃銅板製的空圓盒，一面塗黑，一面鍍亮具有手柄及氣咀可與微小壓強計的橡皮管相連接。

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**0097-1 玻耳耳—馬略特定律演示器**

兩個平行豎立互相連通的玻璃管(徑6厘米,高35厘米)裝於木架上,附金屬壓強計(0—3氣壓),可加壓到3個氣壓,減壓到0.5氣壓。

0098-1 膨脹計

空氣溫度計式,具有帶三通活栓的刻度量氣管和一定容積的玻璃球,用橡皮管與漏斗管相連接,安裝在三足座上,附溫池托架。

0099-1 毛細現象演示器

白屏支架上,一面裝有口徑不同的毛細管5支,另一面固定2個U形玻璃管。

0100-1 晶體空間點陣模型

電木球27個,其中黃色球14個代表氧離子,綠色球13個代表氫離子,用鐵條串連組成氯化氫的空間點陣。

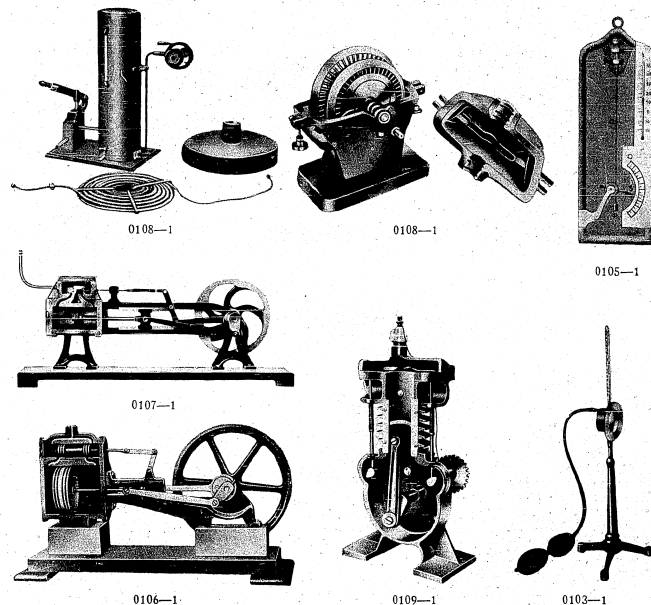
0101-1 梁的彎曲實驗器

木製,具指針和刻度盤,附鋼鑄製的鐵塊(1公斤的二個、500克的二個、200克的二個)。用來演示當變換樑的材料和樑的形狀(長度、寬度和厚度)時樑的曲撓,並可實驗工字樑、人字樑和臂樑的曲撓。

0102-1 飽和氣壓與溫度的關係實驗裝置

由帶二個活栓和一個漏斗的玻璃管,用橡皮管與另一漏斗管組成的可動連通器,附加溫度管和溫度計。

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**0103-1 藍布列德溫度計**

圓盒式,盒表面鍍銀,上面有溫度計的插孔,附打氣球和溫度計。

0104-1 乾濕球溫度計**0105-1 毛髮溫度計****0106-1 蒸汽機模型**

剖面模型,機身鋼鑄製,固定於木座上。

0107-1 吹動式蒸汽機模型

用皮唧打氣可使活塞在汽缸內往復運動。隔玻璃板可見活塞與滑動閥運動情況。

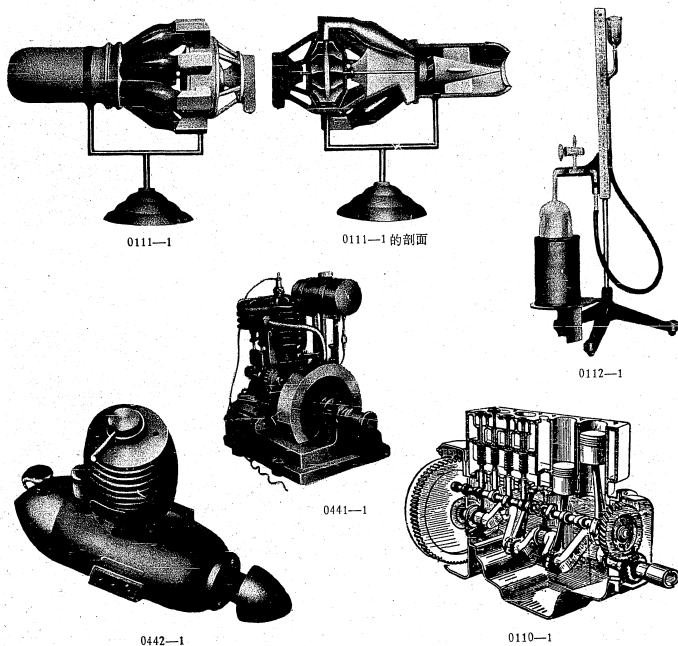
0108-1 蒸汽輪機模型

鋼鑄製,二級速度式汽輪機,附簡單管式水管鍋爐和鍋爐的附屬裝置(包括上水唧筒和水罐)。

0109-1 內燃機模型

鋼鑄製,四衝程單汽缸,上部為燃燒部,下部為汽缸,汽缸內有活塞,具連桿與曲軸可以上下活動,左側有進氣閥,右側有排氣閥,頂部發火柱以小燈珠代替,若和電池連接,到三步衝程時燈珠發光,顯示出爆發現象。

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0110-1 四汽缸內燃機模型

縱剖面模型，附配電裝置。

0111-1 噴氣發動機模型

裝有離心壓縮機的渦輪式空氣噴氣發動機模型。剖開後能看到：進氣道、壓縮器（葉輪）燃燒室，渦輪和噴氣裝置（噴管）等的構造。

0112-1 氣體熱壓係數測定裝置

包括帶活塞的門形管，支架上帶刻度尺和可移動的漏斗管。

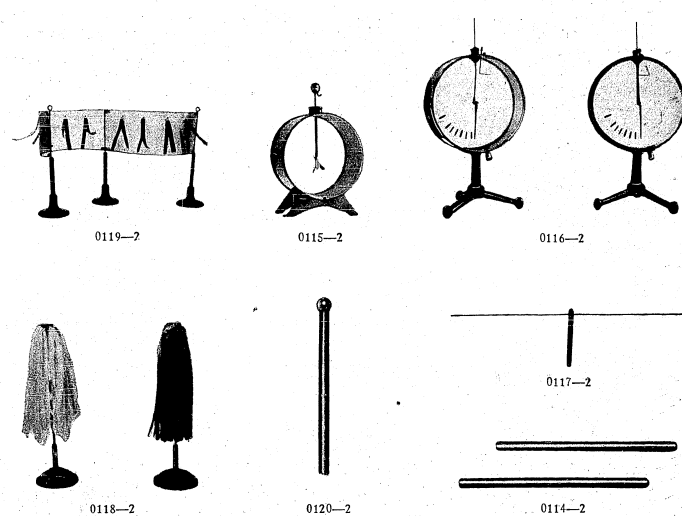
0441-1 可發動的單缸內燃機

四衝程式，附點火裝置，基本生產技術教育用。

0442-1 小型可發動的單缸內燃機

可以安裝在飛機模型、汽艇模型、汽車模型上，基本生產技術教育用。

電 學



0113-2 玻璃棒

棒長 250 毫米，附絛二塊。

0114-2 膠木棒

棒長 250 毫米，附毛皮二塊。

0115-2 箔片驗電器

鼓形，兩面嵌玻璃板，徑 123 毫米，厚 82 毫米，箔片以紙代替，效果良好。

0116-2 指針驗電器

鼓形，鐵皮外殼徑 198 毫米，厚 60 毫米，二面嵌玻璃板，一面玻璃板上帶標度，鉛製指針。

0117-2 驗電器連接桿

絕緣膠木柄一端橫裝 14# 鋼絲一根（長 45 厘米）。

0118-2 驗電羽

金屬支架頂端裝彩色紙羽 60 條（長 20 厘米）全高 31 厘米。

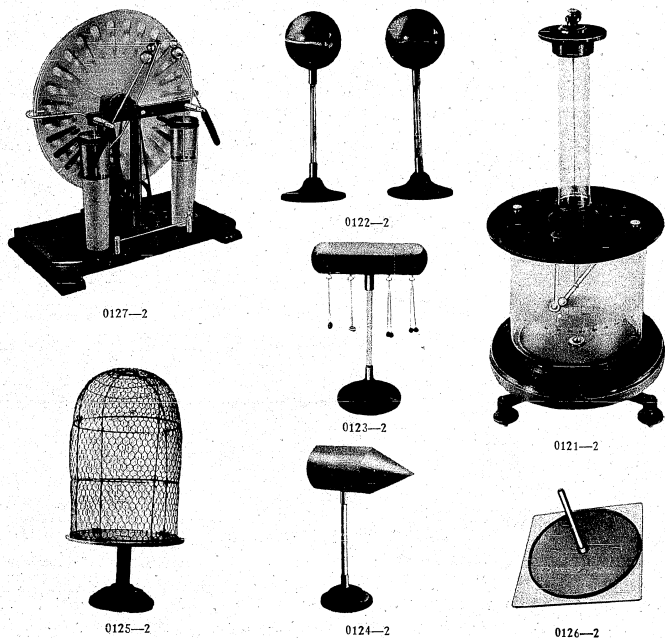
0119-2 驗電帽

細軟銅紗長 35 厘米，寬 10 厘米，用三個支撐支持，兩面共裝紙箔 16 條。

0120-2 驗電球

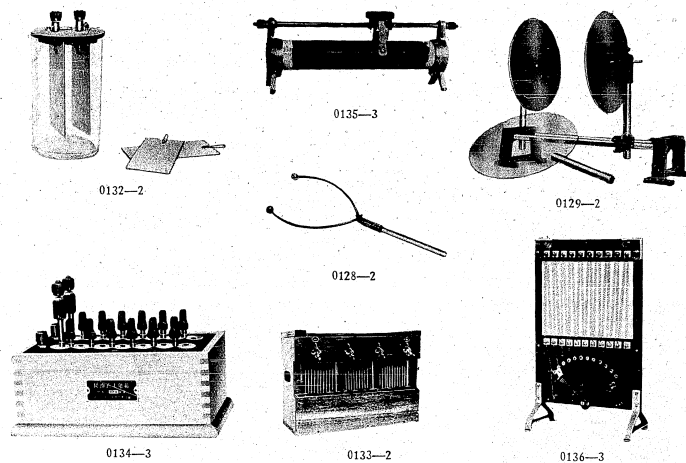
絕緣膠木柄一端安有銅球，柄長 150 毫米，球徑 15 毫米。

電 學



- 0121—2 庫倫扭秤
刻度玻璃罩，罩中心懸玻璃棒一個，罩內側頂蓋上固定玻璃棒一個，全高 49 厘米。
- 0122—2 球形導體
銅質空心圓球，直徑 15 厘米，裝在絕緣支座上。
- 0123—2 枕形導體
圓柱形，兩端半球狀，徑 50 毫米，長 175 毫米，裝在絕緣支座上，附通草球四對。
- 0124—2 尖形導體
一端凸出尖形，另一端凹入尖形的圓柱體，徑 80 毫米，長 200 毫米，裝在絕緣支座上。
- 0125—2 金屬網罩
元頂鐵絲籠，高 30 厘米，直徑 19 厘米，附絕緣金屬台，台徑 22 厘米。
- 0126—2 起電盤
鍍白鐵圓盤一個（徑 23 厘米），中心安膠木柄，附絕緣方形玻璃板一塊。
- 0127—2 感應起電機
玻璃圓盤徑 40 厘米，放電火花距離 80 ~ 120 毫米。供靜電實驗用。

電 學

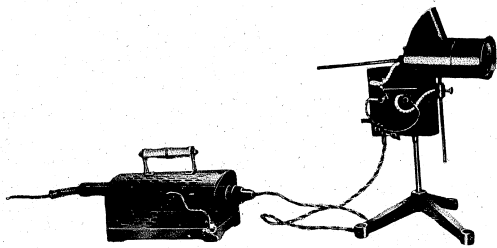


- 0128—2 放電叉
單柄，球徑 15 毫米，叉長 240 毫米，膠木柄。
- 0129—2 可變平行板電容器
金屬圓板（徑 20 厘米）裝於二根平行的滑桿上，滑動最大距離為 22 厘米，一根滑桿上附刻度尺，最小刻度 1 毫米。
- 0130—2 可變電容器
用兩組金屬片製成，共 11 片，每片面積約 42.6 平方厘米。
- 0131—2 萊頓瓶
瓶上口 113.5 毫米，下底 104.5 毫米，高 250 毫米。
- 0132—2 伏打電池
玻璃缸一個，紫銅板一塊，鋅板三塊，板面積 50×40 毫米。
- 0133—2 鉛蓄電池
共三缸，每缸 9 片，串連電壓共 6 伏特，容量 30 安培小時。
- 0134—3 電阻箱
電阻值最小 1 歐姆，最大 1110 歐姆。
- 0135—3 滑動變阻器
最大電阻值 1750 歐姆，最大電流 0.45 安培，誤差 ±5%。
- 0136—3 轉柄電阻器
在木板上固定電阻絲 20 根，每根 0.5 歐姆，轉柄可與接觸點接觸，全電阻 10 歐姆。

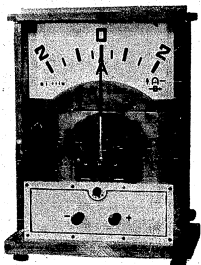
電 學



0141—3



0142—3



0139—3



0137—3



0138—3

0137—3 定值電阻

圓形電木盒一面有兩個接線柱，用錫銅電阻絲分別繞製成：1 歐姆、2 歐姆、3 歐姆、4 歐姆、5 歐姆電阻器各一只。

0138—3 直線電橋

1 公尺長帶標度的木尺上裝電阻絲一根，電阻約 1 歐姆，誤差 ±10%。

0139—3 演示用電流計

靈敏度 2 毫安培，表頭電壓降 50 毫伏特誤差 ±5%。測量範圍：直流電流 0—1.5—5 安培；直流電壓 0—5—15 伏特，交流電流 0—2 安培，交流電壓 0—15 伏特。

可作檢流計，電流計，電壓計，在課堂演示用。

0140—3 懸圈電流計

仿民主德國 Chemnitz 廠出品靈敏度 1×10^{-7} 安培，附光源及架尺。

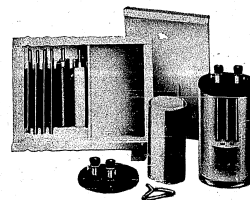
0141—3 簡式正切電流計

仿民主德國 Chemnitz 廠出品，單環。

0142—3 弧光燈

齒條調節式，附限流器及聚光透鏡（直徑 70 毫米）用 220 或 110 伏特電源。

電 學



0143—3



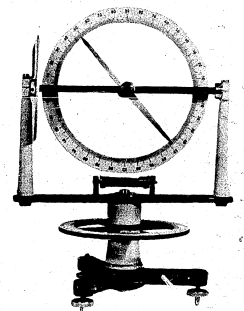
0147—3



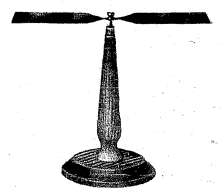
0144—3



0145—3



0149—3



0146—3

0143—3 電流的化學效應實驗器

玻璃缸，帶接線柱電木蓋，附銅板，鋅板各二塊，碳棒二根。

0144—3 條形磁鐵

鉛、錫、銻合金制，磁體（長 152 毫米，寬 19 毫米）二個，帶銜鐵裝在木盒內。

0145—3 蹄形磁鐵

鉛、錫、銻合金制，磁體高 90 毫米，磁極間距離 46 毫米，附銜鐵。

0146—3 磁 針

木支座，瑪瑙製軸承。

0147—3 磁分子模型

木板座上裝有四行小磁棒，每行六個。

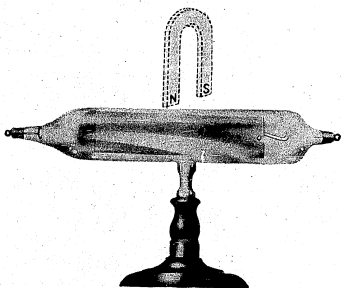
0148—3 鐵 屑

鐵粉約 100 克，附細夏布網一塊。

0149—3 磁傾儀

三足架座上裝有一個固定刻度圓盤和二個可轉動刻度圓盤，盤上帶有游標，並裝有水平泡。

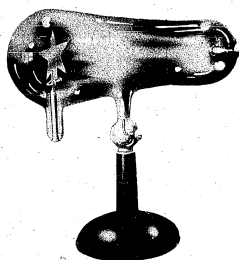
電 學



0153—1



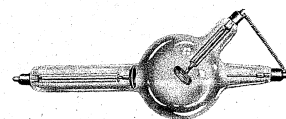
0154—1



0152—1



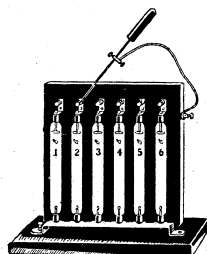
0150—1



0156—1



0155—1



0151—1

0150—1 低氣壓放電管

玻璃管兩端固定電柱各一個，中部開口可以抽氣用，長 60 厘米，徑 35 毫米。

0151—1 低氣壓放電管組

木立板座上裝有六種真空程度不同的放電管，管長 40 厘米。

0152—1 示直進的陰極射線管

直徑 8 厘米，長 23 厘米，裝在電木座上。

0153—1 示磁效應的陰極射線管

直徑 4 厘米，長 27 厘米，裝在電木座上。

0154—1 示機械效應的陰極射線管

球的直徑 12 厘米，內裝小輪，輪葉上能發出不同顏色的光。

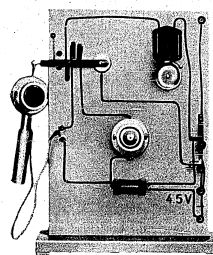
0155—1 示發生熒光的陰極射線管

徑 7.5 厘米，長 19 厘米，管內裝有軟體動物的介壳碎塊。

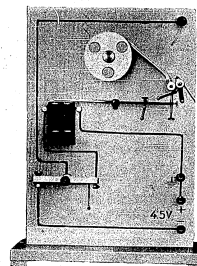
0156—1 倫琴射線管

又名“X射線管”，附螢光板。

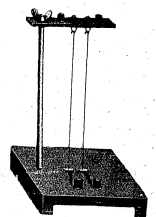
電 學



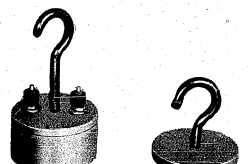
0161—3



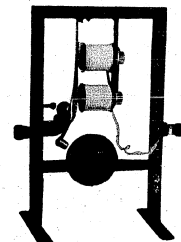
0162—3



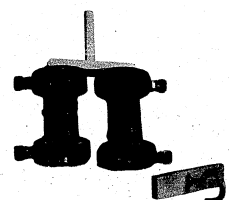
0158—3



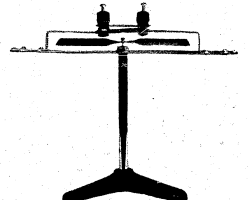
0159—3



0160—3



0161—3



0157—3

0157—3 溫差電偶

用銀銅和紫銅板製成，帶接線柱，附磁針。

0158—3 通電導體相互作用實驗器

木座上裝一根支桿，頂端橫梁懸掛二根金屬絲，座上安二個水銀槽及接線柱。

0159—3 圓形電磁鐵

通過 0.8 安培電流，可以吸引 15 公斤重物，線圈可拆下。

0160—3 蹄形電磁鐵

由 U 形鐵心和用絕緣導線繞成的線圈二個及銜鐵等組成。用 4—5 伏特電源，可吸 12 公斤重物。

0161—3 電 鈴

4—5 伏特電源，手搖交流發電機和電池均可。可以聚光燈、電弧燈等可將電鈴的陰影投射到影屏上，清晰地看到整個電鈴構造。

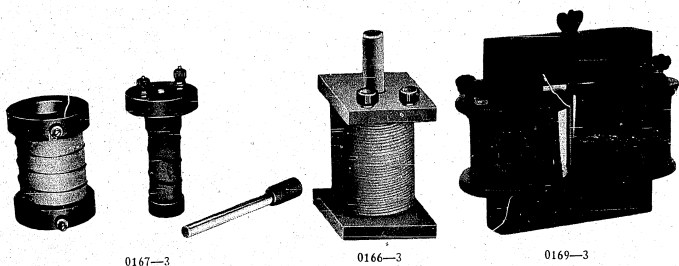
0162—3 電報機模型

記錄式，木板座上裝有電鍵和記錄器，一臺二個可以互相收發電報。

0163—3 電話機模型

木板座上裝有送話器和聽筒，一臺二個可以互相通話。

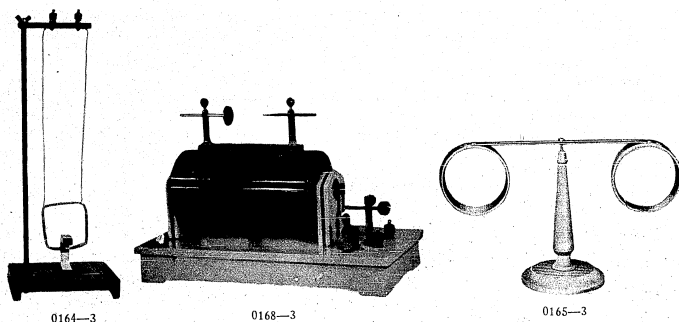
電 學



0167—3

0166—3

0169—3



0164—3

0168—3

0165—3

0164—3 左右手定則說明器

木座上裝一根支桿，頂端橫梁懸掛一個方形線框。

0165—3 楞次定律實驗器

一條鉛板連接二個鉛環，一環閉合，一環開口，架於木質支座頂端尖上兩環承軸。

0166—3 自感實驗器**0167—3 原副線圈**

原線圈和副線圈均用雙紗包線繞製，外層繞彩色指示線，指示電流方向，鐵心具有膠木柄。原、副線圈比數約為5:1。

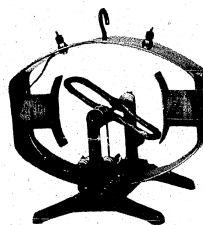
0168—3 感應圈

用12伏特電源，放電火花可達8—10厘米。

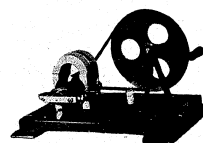
0169—3 可拆變壓器

Γ形鐵心二個，木質圓筒外繞紗包線製成線圈二個，原線圈為0—110—220伏特，副線圈為0—6—12伏特，線圈可以拆下供說明變壓器原理。

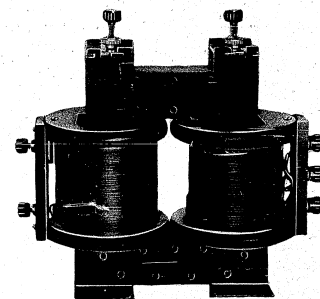
電 學



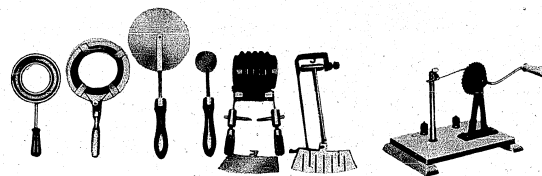
0171—3



0172—3



0170—3



0170—3 附件

0170—3 萬用變壓器

能做全部電磁學實驗，主要組成部分有，倒T字形鐵心，鐵心合閉條各一個，鐵心壓板二個，原線圈(0—110—220伏特)，副線圈(0—36—110伏特，0—6—12伏特)各一個，最大負荷為50瓦特。

附件：①手搖斷續器，②傳克繼架，③尼龍和非尼龍各一個，④傳克輪，⑤傳克鉗塊，⑥鉗圈及擋板，⑦感應燈圈，⑧游錫，⑨焊接線圈和焊接夾，⑩巴羅輪，⑪水銀槽，⑫隔磁板(銅、鉛各一個)。

實驗範圍：1. 自感現象實驗，2. 互感現象實驗，3. 傳克電流實驗(尼龍繼，轉輪，旋轉鉗塊) 4. 跳圈實驗，5. 楞次定律，6. 巴羅輪實驗，7. 低壓直流變高壓交流實驗，8. 作降壓變壓器實驗，9. 電熱效應實驗①磨錫，②焊接，③脫波實驗，④充磁去磁實驗。

0171—3 電機原理說明器

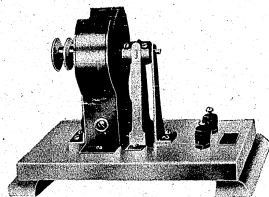
鉛鐵座，鐵板壓製制形電樞外殼，壳內壁裝有電磁極，單線電樞繞在磁場中心，兩端有支架固定，另裝可以變位的電刷二個，外殼塗紅、藍二種顏色各有接線柱一個，紅色為正極，藍色為負極。

用4—6伏特電源可以轉動，用以說明交流發電機原理。

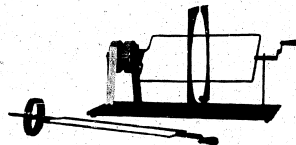
0172—3 手搖交流發電機

永久磁場，兩極電壓3伏特，電樞由紗包線繞在鐵心上而成，用手搖輪帶動電樞轉動即能發電，實驗時改變電刷在環上的位置就可成為交流或直流發電機。

電 學



0173—3



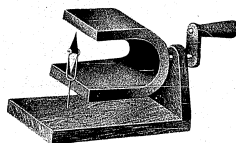
0174—3



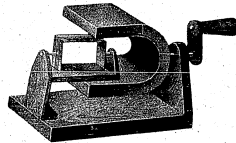
0177—3



0177—3



0175—3



0175—3

0173—3 四伏特電動機

木座上裝有解剖式電動機，附接線柱，通電流 0.4 安培，用手搖交流發電機或電池作電源，可以轉動。

0174—3 交直流發電機電樞模型

解剖式，木座。

0175—3 磁場轉動發電機說明器

永磁式，附接圈及磁針。

0176—3 充電整流器

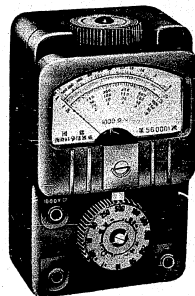
6 安培，24 伏特，附安培計、伏特計各一只，供鉛蓄電池充電和直流電源用。

0177—3 示波器

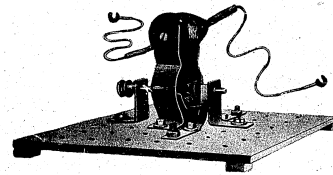
示波器二個，旋轉鏡一個。示波器是由半圓形磁鋼和兩塊軟鐵製成永久磁場，在兩磁極間裝有線圈，附震動器。用 12 伏特電源，電流 50—100 毫安培。

旋轉鏡是八面鏡垂直裝在三足座的金屬軸上，可自由轉動，軸桿有升降裝置，三足座具水平螺絲。可做普通交流正弦波，微音器的電流變化曲線，音波振動及瓦斯火船壓力計的變化等實驗用。

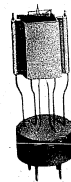
電 學



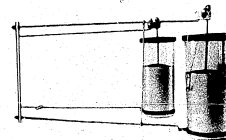
××—3



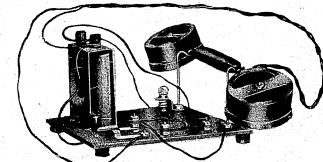
0443—1



0180—3



0178—2



0444—1

0178—2 電共振演示器

萊頓瓶二個，一個為固定聯絲，一個為滑動聯絲。

0179— 兩極電子管

0180—3 三極電子管模型

木製，用以說明三極電子管的結構和原理。

0181—3 礦石收音機演示板

用以說明礦石檢波作用及礦石收音機的裝置，附耳機。

0182—3 單管收音機演示板

用 30 或 32 型真空管，附耳機，用以說明單管收音機的裝置。

××—3 萬用電表

應用範圍，交直流 0.5—500 毫安培，交直流 10—500 伏特，1—1000 歐姆。

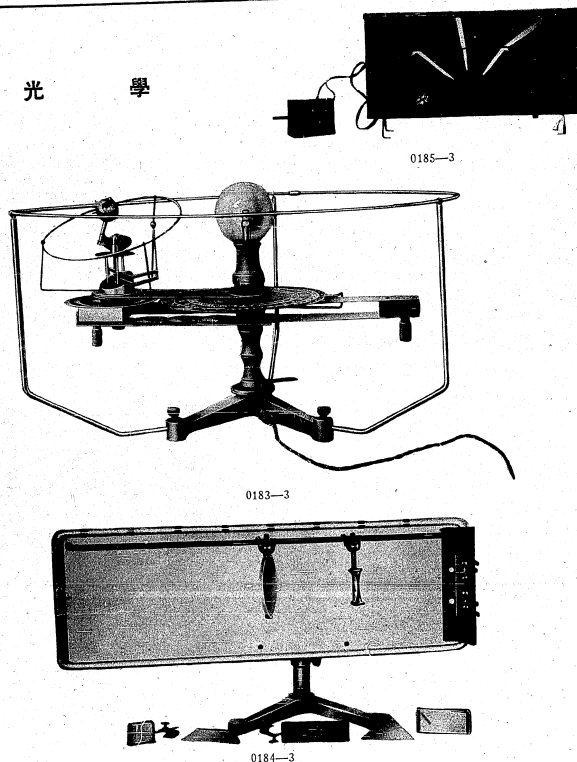
0443—1 少年電器工程師實驗箱 No. 1

可做磁的基本性質實驗和電磁實驗及安裝電機模型等 40 餘個實驗。基本生產技術教育用。

0444—1 少年電器工程師實驗箱 No. 3

可製成兩地距離 100 公尺的電話站和電報站，基本生產技術教育用。

光 學



0183-3 月地運行儀

五六式、張俊德等設計。鐵製三足座上裝有季節盤、黃道圈、指時針、太陽、月亮、地球、調角器、白道裝置、月相盤等。太陽為特製電燈泡，附變壓器，供演示 22 種普通天象。

0184-3 光具盤

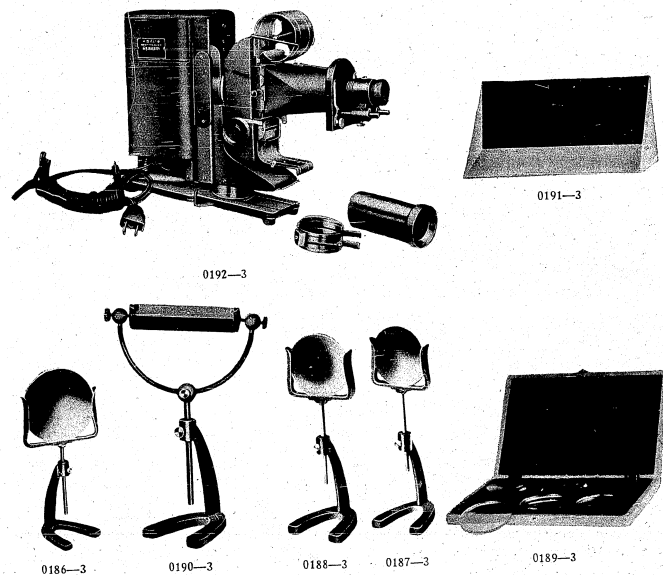
三足座上裝有鐵製白色光屏，屏頂端有掛透鏡滑桿，一端有縫孔板及反光鏡架，屏上有活動透鏡夾一個，附小圓及光鏡四個，三稜透鏡和梯形透鏡各一個，帶有鐵架和鉤的透鏡有：大小雙凸、小雙凹透鏡、平面和凹面鏡各一個，帶光源。

實驗範圍：1. 光線穿過透明平行板的折射，2. 光線經過透鏡的折射，3. 光線在鏡架中的全反射，4. 光線投射到凹面鏡上的反射，5. 光線在透鏡中的折射，6. 透鏡或凹面鏡（反射鏡）共軛焦點的改變與發光點距離、透鏡或凹面鏡的距離改變之關係，7. 物體不在透鏡或反射鏡的主軸上的成像，8. 在開普勒望遠鏡、伽利略望遠鏡及顯微鏡中的光路。

0185-3 全反射演示器

鐵製長方形水箱，前側裝玻璃板，底部中央裝圓柱形燈泡，燈外套以帶狹縫的金屬罩，縫的密度不等，可自由轉動，以調節光線的投射方向，箱底有放水孔。電源用 12 伏特，15 瓦。

光 學



0186-3 凹 鏡

凸凹面鏡，附架。

0187-3 雙凹透鏡

直徑 75 毫米，焦距 300 毫米，附架。

0188-3 雙凸透鏡

直徑 75 毫米，焦距 300 毫米，附架。

0189-3 透鏡組

六種透鏡：雙凸、雙凹、平凸、凸凹、凹凸、平凹。裝於木盒內。

0190-3 三稜鏡

長 100 毫米，寬 25 毫米，60° 角，附架。

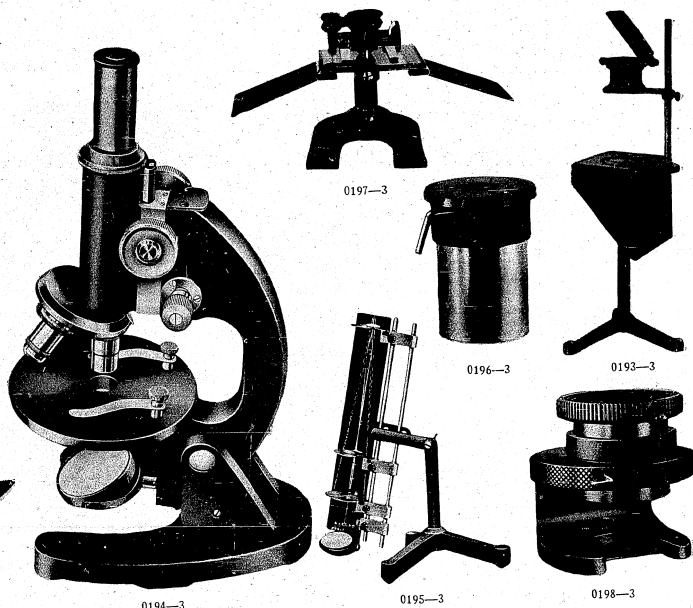
0191-3 直角三稜鏡

長 40 毫米，直角形，45° 及 90°。

0192-3 顯微幻燈機

科普式，機身金屬製成，高 21 厘米，備有消色差鏡頭，焦距 130 毫米。附顯微機構，可以放大生物切片和放映 32 毫米膠片及單片。

光 學



0193-3 幻燈反射裝置

不附光源，配合幻燈機和其他光源可將一切水平狀的儀器放映於銀幕，如：布期運動說明器等。

0194-3 生物顯微鏡

金屬鏡架，鏡筒有齒條升降及微動升降器，鏡筒為國際標準，和進口國際標準鏡頭均可互換。鏡台直徑 180 毫米，台下有聚光板和反射鏡，聚光板有五個不同圓孔用以調節光量，反射鏡為平、凹鏡，直徑 50 毫米。放大倍率為 40×~675×，附惠更斯目鏡 5×，10×，15× 各一只，消色差物鏡 8×，45× 各一只，裝於精製木箱內。

0195-3 顯微鏡模型

立式，放大鏡及顯微鏡兩用，附光路圖板，用以說明顯微鏡及放大鏡成像原理。

0196-3 指示接目鏡

10×，有活動指針，可配合生物顯微鏡使用。

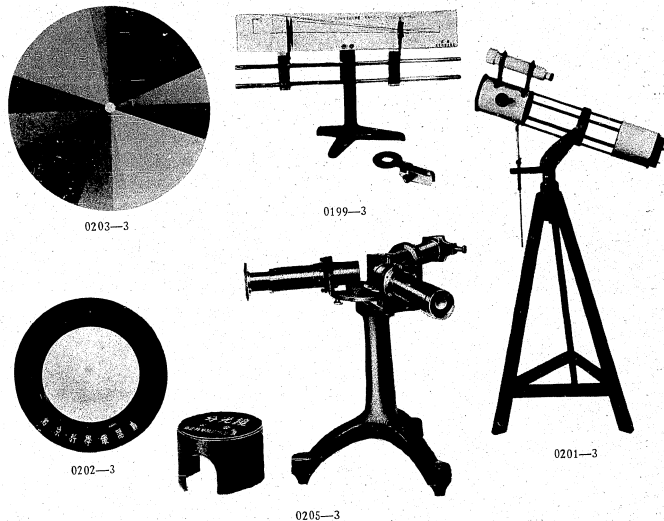
0197-3 解剖放大鏡

膠木製鏡架，膠木鑲粉壓製鏡座，架上有升降輪，玻璃鏡台，鐵插板。備有消色差鏡頭 5×，10×，20× 各一只。供大學、中學作生物解剖放大使用。

0198-3 讀數放大鏡

放大 10×，可讀 1/10 毫米。

光 學



0199-3 望遠鏡模型

三足座上裝兩根金屬滑桿，透鏡可以固定在滑桿的任何位置上，滑桿後面有一塊直立金屬光路圖板，一面是伽利略望遠鏡光路圖，一面是開普勒望遠鏡光路圖，共有三塊透鏡，焦距大的雙凸透鏡是公用物鏡，小雙凸透鏡是開普勒望遠鏡的目鏡。雙凸透鏡是伽利略望遠鏡的目鏡。用以演示開普勒和伽利略兩種望遠鏡成像的原理。

0200-3 複鏡雙筒望遠鏡模型

解鎖式，半邊結構，附光路圖板。

0201-3 天文望遠鏡

民主德國反射式，三足架上裝有反射望遠鏡，放大倍率 100×~150×，附有尋星鏡。

0202-3 牛頓環

由平凸透鏡和平面玻璃疊合而成，外設膠木圓框，演示光的干涉現象，用幻燈可映於銀幕。

0203-3 七色板

金屬板，精印七色，裝在離心機上使用。

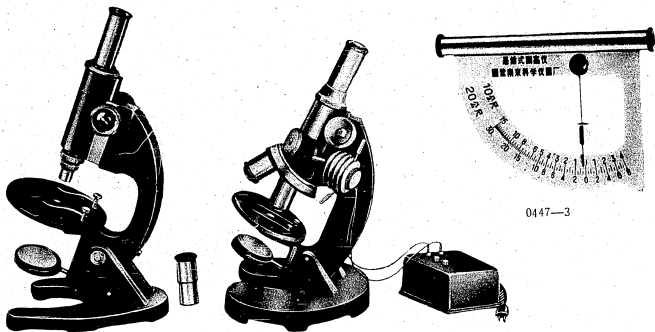
0204-3 色玻璃

紅、黃、綠、藍、紫各一塊，可做色之互補和單色光等實驗。

0205-3 分光鏡

三足支座上裝有望遠鏡，七倍消色差鏡頭焦距 13 厘米，物鏡直徑 2 厘米，準直管長 13 厘米，標度管一端裝有在 1 厘米內細分為 250 分度的膠質薄膜，夾於平板玻璃內。用來分析光譜，光源可以採用天然光線、酒精燈、射光燈及光譜管等。

光 學



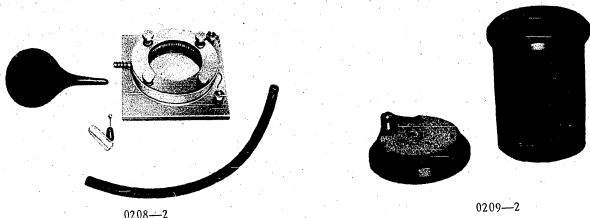
0448-3

0449-3

0447-3

- 0206— 演示光電管
 0207— 氧化亞銅光電池
 0447-3 手持測高儀
 H.N. 馬卡羅夫式。
 0448-3 單筒顯微鏡
 無微動機構，備有 8× 物鏡一只，5×、15× 目鏡各一只，放大倍率 40×—120×，裝於木箱內。
 0449-3 金相顯微鏡
 帶光源變壓器，備有 8×、45× 物鏡各一只，5×、10×、15× 目鏡各一只，倍率 40×—675×。

原 子 結 構 學



0208-2

0209-2

- 0208-2 威耳遜雲室
 圓形鐵框架兩面玻璃窗安在木座上 (136×136 毫米)，內裝有放射性物質，側壁有通氣咀，附膠皮球和橡皮管。
 0209-2 閃爍鏡
 金屬圓管徑 28 毫米，高 38 毫米，頂部有透鏡，底部裝有放射性物質和螢光塗面。

學生物理實驗儀器

0220-2 光學實驗
 光學實驗儀器，包括：光學平台、光學儀器、光學附件等。

0221-1 萬用表
 萬用表，包括：電阻、電容、電感、電壓、電流、功率等。

0222-1 游標
 游標，包括：游標卡尺、游標千分尺、游標百分尺等。

0223-1 金屬圓柱體
 金屬圓柱體，包括：金屬圓柱體、金屬圓柱體附件等。

0224-1 扭簧測力計
 扭簧測力計，包括：扭簧測力計、扭簧測力計附件等。

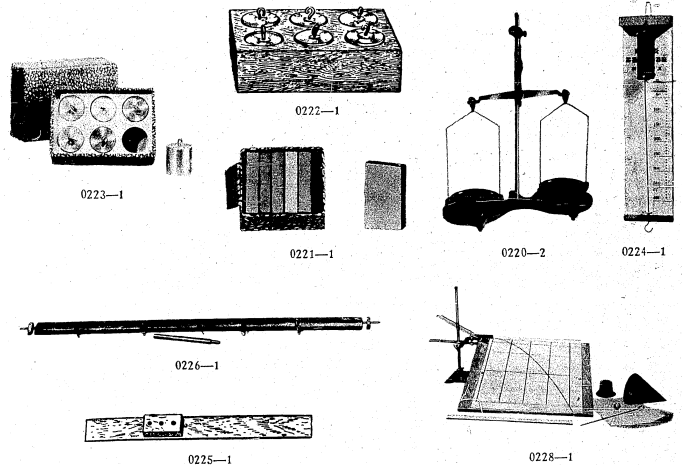
0225-1 標準秤
 標準秤，包括：標準秤、標準秤附件等。

0226-1 稱
 稱，包括：稱、稱附件等。

0227-1 物理實驗儀器
 物理實驗儀器，包括：物理實驗儀器、物理實驗儀器附件等。

0228-1 物理實驗儀器
 物理實驗儀器，包括：物理實驗儀器、物理實驗儀器附件等。

學生實驗儀器



0220—2 支架天平

吊盤式，秤量 200 克，全感量 1/5 克，附砝碼。

0221—1 長方體組

黃銅、鉛、鋁各二個，每個體積 40×25×8 毫米。

0222—1 鈞碼

電木和鐵粉壓鑄，每個重 100 克，六個一組，裝在電木盒內。

0223—1 金屬圓柱體

黃銅、鉛、鋁、帶鈎的圓柱體各二個，直徑 30 毫米，高 30 毫米。

0224—1 400 克測力計

彈簧測力計，最大測量範圍為 400 克，最小分度為 10 克。

0225—1 摩擦計

又名“斜面儀”，木製，板面積 500×50×4 毫米，附長方形木塊。

0226—1 橫桿

木製，長 50 厘米，兩端具有調整螺絲，帶金屬軸桿和鋼絲製的環。

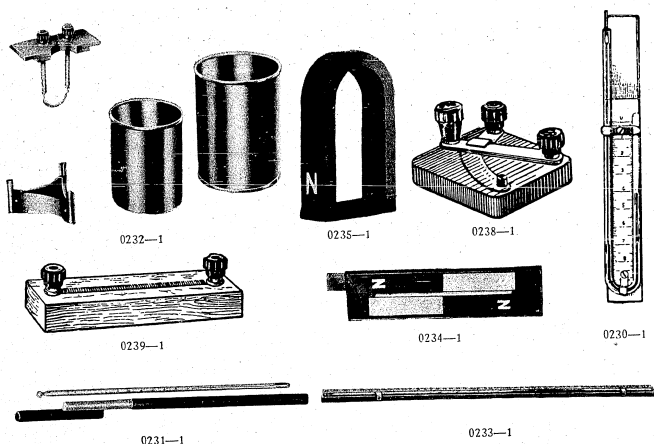
0227—1 力矩盤

木製圓盤，盤徑 25 厘米，附金屬軸桿，及鋼針四根。

0228—1 平拋實驗裝置

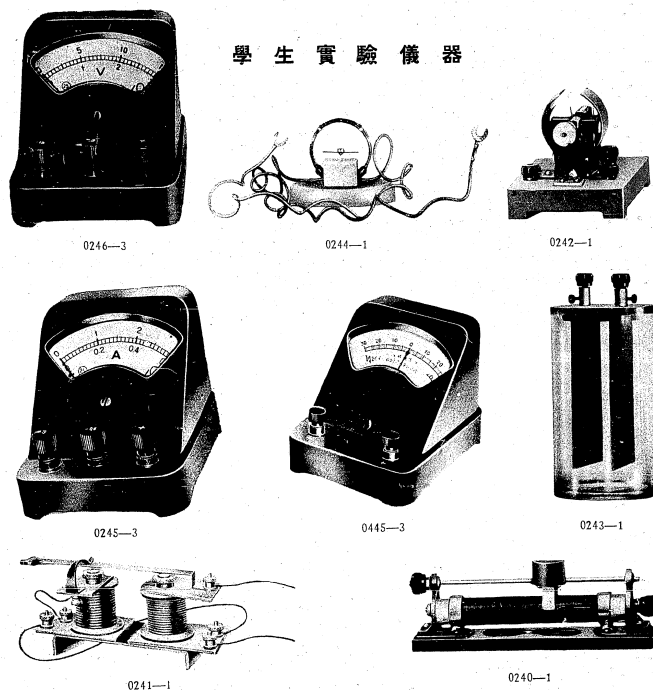
木質板長 40 厘米，寬 40 厘米，附投射槽和錐形紙筒。

學生實驗儀器



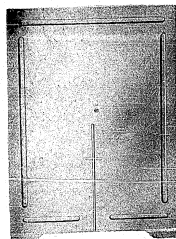
- 0229—1 金屬球
直徑 20 毫米，中心有孔。
- 0230—1 小型水銀氣壓計
巴申申斯基式小型壓力計，U 型管固定在帶毫米標度的金屬板上，附 50 克水銀及漏斗一個。
- 0231—1 溫度計
-10°C~100°C，每一分度為 1°C
- 0232—1 量熱器
內筒鉛製，容量 250 立方厘米，重量 50 克，附螺旋電阻絲，其電阻為 2 歐姆。
- 0233—1 玻意耳—馬略特定律實驗器
在毫米刻度直尺上，固定長 50 厘米的玻璃管，附 40 克水銀和水銀漏斗一個。
- 0234—1 條形磁鐵
磁體一對，裝於紙盒內，附銜鐵。
- 0235—1 蹄形磁鐵
裝於紙盒內，附銜鐵。
- 0236—1 鐵屑盒
鐵盒內裝鐵屑約 50 克，盒蓋上帶有很多小孔。
- 0237—1 導線
兩端帶接線片的膠花線，包括：50 厘米長的二根，30 厘米長的三根，15 厘米長的三根。
- 0238—1 單刀開關
木質座，12 伏特，5 安培。
- 0239—1 電阻圈
1 歐姆，2 安培；2 歐姆，2 安培；4 歐姆，1 安培各一個。

學生實驗儀器



- 0240—1 滑動變阻器
電阻值 6—7 歐姆 2 安培。
- 0241—1 電磁感應器
帶鐵心線圈二層和組成電磁鐵部件 3 件。
- 0242—1 電機模型
由固定子、轉子、整流器、電刷等四個部分組成，可以拆卸。
- 0243—1 銅電解器
玻璃缸，帶接線柱電木蓋和銅極板二塊。
- 0244—1 簡易檢流計
由磁針和線圈組成，固定於木座上。
- 0445—3 靈敏電流計
斜梯形，測量範圍 200—300 毫安培。
- 0245—3 直流安培計
動圈式，斜梯形，測量範圍 0—0.6—3 安培，誤差 ± 2.5%。
- 0246—3 直流伏特計
動圈式，斜梯形，測量範圍 0—3—15 伏特，誤差 ± 2.5%。

學生實驗儀器



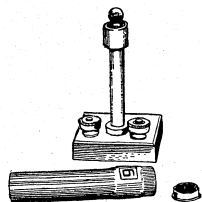
0250—1



0252—1



0251—1



0253—1



0254—1



0247—1

0247—1 雙凸透鏡 No. 1
固定在鐵板支架上，焦距 14 厘米。

0248—1 雙凸透鏡 No. 2
固定在鐵板支架上，焦距 7 厘米。(樣式同 0247—1)

0249—1 雙凹透鏡 No. 3
固定在鐵板支架上，焦距 9 厘米。(樣式同 0247—1)

0250—1 縫屏
鐵板製， 12×16 厘米，縫寬 0.8 毫米。

0251—1 毛玻璃小光屏
鐵製座上裝有毛玻璃一塊， 6×9 厘米。

0252—1 方格小光屏
鐵製座上裝有帶毫米方格玻璃一塊，面積為 6×9 厘米。

0253—1 光源燈座
鐵製燈座附 2.5 伏特小電珠，燈罩側面具有注音符號“ㄐ”。

0254—1 小平面鏡
玻璃鏡純木板上， 4×9 厘米。

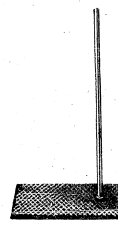
學生實驗



0258—1



0259—1



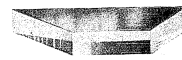
0256—1



0257—1



0260—1



0255—1

0255—1 玻璃磚
不等腰梯形玻璃磚，兩端可兼充鏡用。

0256—1 方座支架
又名“鐵板座”，鑄鐵長方形底座，座上裝有 60 厘米長的支桿。

0257—1 複夾
又名“十字夾”，鑄鐵製。

0258—1 燒井夾
夾口鴨嘴形，可兼充一般夾子用。

0259—1 鐵環
小型環帶小孔以便懸掛單擺。

0260—1 鐵圈
徑 35 毫米，高 10 毫米，厚 2 毫米。

0261—1 刻度尺
木製，長 35 厘米，帶毫米刻度。

0262—1 三角尺
斜邊長 25 厘米，角度為 30 度、60 度、90 度對邊帶毫米刻度。

0263—1 量角器
小型，塑膠製。

0264—1 量筒
直徑 30 毫米，每刻度為 1c.c.，容量 100c.c.

0265—1 酒精燈
玻璃製。

中国科学院植物研究所

11

植物学

生物模型、标本、切片

中国科学院植物研究所

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植物学

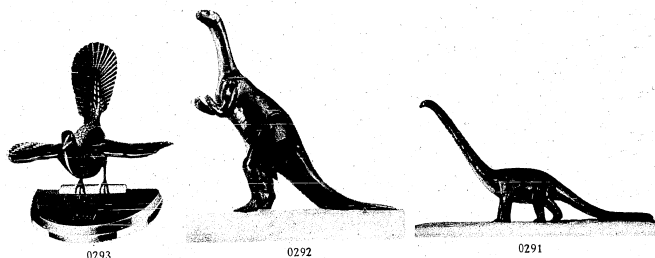


主辭辭壁，辭本辭

國營北京、瀋陽、南京科學儀器廠聯銷處

41

古生物模型



0290 馬足進化模型

陶磁制，共六個型，為始新世至現代，各時代馬之前肢。

0291 草食恐龍模型

混合紙漿制，化石復原像，根據科學院古脊椎動物研究室保存之模型復制而成。

0292 肉食恐龍模型

混合紙漿制，化石復原像，根據科學院古脊椎動物研究室保存之模型復制而成。

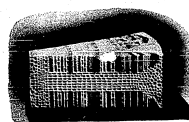
0293 始祖鳥化石及復原模型

包括二件，化石為石膏復制，長 49 cm 寬 39 cm 裝置於玻璃匣中，復原模型為紙制裝於木座上。

0294 中國猿人模型

包括大猩猩頭骨，大猩猩大腦骨，中國猿人頭蓋，中國猿人腦髓，中國人頭骨復原模型，中國猿人半身像等各 1 件。中國猿人石器，河套人石器各 4 件，山頂洞人男女頭骨 2 件，山頂洞人文化 6 件，現代人腦髓 1 件。

植物模型



0295

0295 雙子葉植物莖模型(橫木)

石膏制，三年生根木莖，扇形縱橫斷，長 43 cm，寬 27 cm，高 18 cm，示表皮、皮層、維管束等構造，固定於木座上。



0296

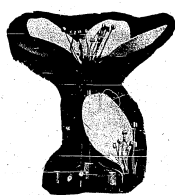
0296 根縱剖模型

石膏紙漿制，長 40 cm，寬 11 cm，示根冠、生長點、伸長區、根毛區及中柱皮層等構造，固定於三足座上。

植物模型



0298



0299

0297 葉的縱橫斷面模型

紙制，長 30 cm，寬 15 cm，高 12 cm，示表皮氣孔、柵欄組織、海綿組織、葉脈、維管束等構造，固定於三足座上。

0298 小麥花模型

紙制，40 倍實物大，示外稃、內稃、稃片大小等，外稃可裝卸，全型固定於木座上。

0299 桃花模型

紙制，12 倍實物大，花托子房按正中縱剖分瓣，固定於三足座上。

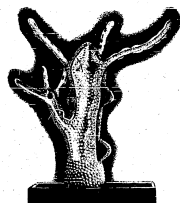
動物模型



0300



0302



0301

0300 反芻胃(牛胃)模型

為實物的五分之二大，示瘤胃、蜂巢胃、重瓣胃、皺胃之內外構造，並為觀察食道溝等內部構造，將全型解剖成二塊，可隨時取下小塊觀察。

0301 水綿縱斷模型

紙制，由口到基盤高 35 cm，為帶芽的水綿，全體除下部四分之一外，正中縱剖示觸指、消化腔、卵果、精巢及胚囊構造，固定於木座上。此外，並附有體壁切面放大圖，以示刺絲泡之形狀。

0302 有鉤蠅蟲生活史模型

石膏制，包括大小五件：(1)全蟲浮形式，示各式節片；(2)成熟節片，示神經排泄及生殖器；(3)頭頸部節片，示吸盤及鉤；(4)六鉤胚；(5)囊蟲，分別固定於三個木座上。

0303 草履蟲模型

石膏制，本型有 35 cm 長，12 cm 寬，為實物之 1400 倍，全型由正中縱剖以示其內質中大小核、消化胞、伸縮胞等構造，模型表面具備全身洗毛，以四個支柱架在木板上。

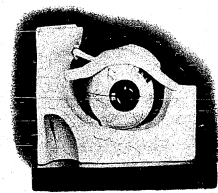
生理模型



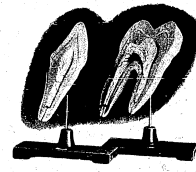
0306



0307



0308



0309

0304 蝗蟲解剖模型

0305 蚯蚓解剖模型

0306 人體骨骼模型

紙模製，實物大，本型為男子全身骨骼，每塊骨均能卸開，全型懸掛於鐵架上，額骨由額骨中央水平斷開，以示顱底、篩、蝶骨等形狀。

0307 人體半身內臟解剖模型

紙製，高 92 cm，全型表面，右半身為皮膚，左半身為淺層肌肉，胸腹部體壁可打開，示內臟器官：心臟、肺、胰、腸、胃、膀胱等均可拆卸，並剖示內部構造，全型共分 16 塊，固定於木座上。

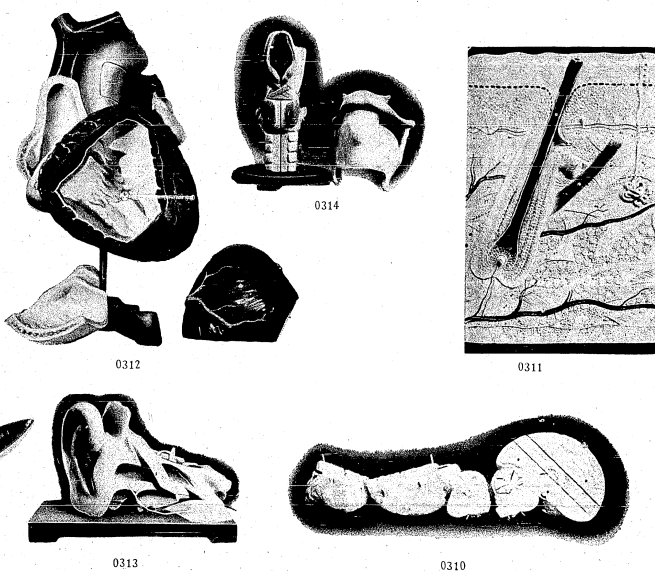
0308 眼解剖模型

紙製，全型 5 倍自然大，包括眶骨、眼球、眼肌、淚腺及視神經等，共分解為六塊，眼球按水平方向開闢。

0309 牙解剖模型

紙製，30 倍自然大，包括白齒、門齒各一個，正中縱剖，示法瑯質、齒骨質、白質質、齒髓等構造，固定於木座上。

生 理 模 型



0310 腦解剖模型

紙製，1.5倍自然大，分解為六塊，大腦右半球橫切，左半球縱切，小腦及腦桿為正中縱斷，示腦之各部構造及十二對腦神經，模型裝在紙盒內。

0311 皮膚模型

石膏制成，全型長35cm，寬24cm，為頭皮、掌皮、混合模式構造，示表皮之皮層、汗腺、毛囊、皮脂腺、感覺小體、血管神經等，全型固定於木座上。

0312 心臟解剖模型

紙製，2倍實物大，共分解為五塊，左右心房心室，可以剖開，示三尖瓣、二尖瓣、半月瓣及動靜脈之開口，血管為通管，全型按自然位置置於三足座上。

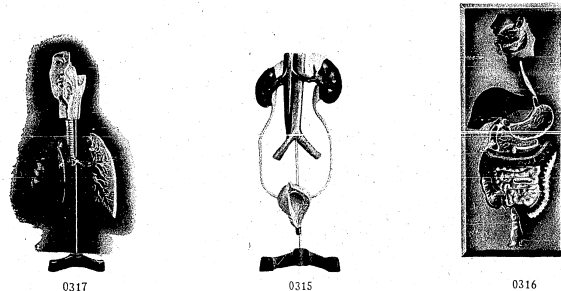
0313 耳解剖模型

紙製，5倍自然大，共分解為四塊，示外耳道、鼓室及內耳等結構，內耳迷路可裝卸，蝸牛殼由正中縱剖，示鼓輪螺旋板及膜蝸管等部，全型固定於木座上。

0314 喉頭解剖模型

紙製，5倍實物大，共分解為五塊，全型按矢狀方向分瓣，外部示舌骨、甲状軟骨、會厭、氣管軟骨及有闕肌肉，內部示喉嚨肌帶及室繫帶，全型立於具帆布木槽的木座上，氣管套於槽外。

生 理 模 型



0315 泌尿系統模型

紙製，實物大，包括左右腎、輸尿管及膀胱，左腎後面剖開，示皮質、髓質、腎盂、腎盞、膀胱前面由左半剖開示內壁，輸尿管口及尿道，輸尿管為橡膠製，全型按自然位置置於三足座上。

0316 消化系統模型

紙製，近實物大，浮影式，表現消化管、消化腺及腺體導管，胃之全部及腸之局部半面剖開，以示內壁結構，全型裝置木箱內。

0317 呼吸系統模型

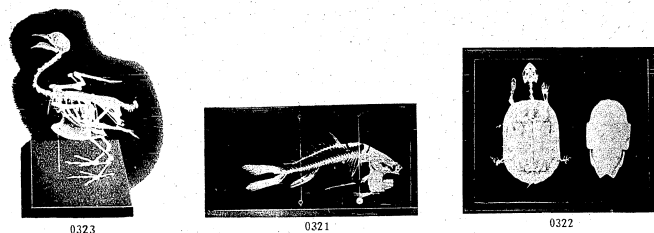
紙製，近實物大，表現鼻腔、喉頭、氣管及左右肺，左肺自肺門剖開，全型裝於金屬支柱上，附三足座。

0318 神經系統模型

0319 循環系統模型

0320 條件反射及無條件反射模型

骨 骼 標 本



0321 魚骨骼

標本縛於防腐木製兩面玻璃盒內，骨骼完全漂白，按自然位置串連，卸下右側腿蓋骨，按於底板上，另加帶訪骨關節椎骨一塊，尾椎一塊，附標籤註解。

0322 龜骨骼

標本縛於防腐玻璃盒內，骨骼完全漂白，按自然位置串連，腹甲分離並列於背甲左側，附標籤註解。

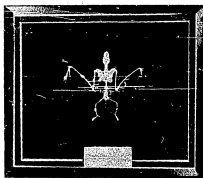
0323 人骨骼

標本站立台板上，裝於防腐玻璃盒內，骨骼完全漂白，按自然位置串連，附標籤註解。

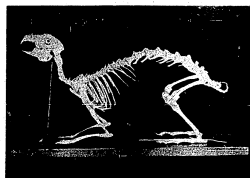
骨 骼 標 本



0324



0325



0326



0327

0324 蛙骨骼(蟾蜍骨骼)

標本縛於防塵紙製兩面玻璃盒內,骨骼完全漂白,按自然位置串連,舌器貼於腹面玻璃上,附標籤註解。

0325 蝙蝠骨骼

標本縛於防塵玻璃盒內,骨骼完全漂白,按自然狀態串連,附標籤註解。

0326 兔骨骼

標本站立台板上,裝於防塵玻璃盒內,骨骼完全漂白,按自然位置串連,附標籤註解。

0327 猴骨骼

骨骼完全漂白,按自然姿勢串連,懸於三足支桿上,遮以防塵外套。

浸 製 解 剖 標 本



0330



0331



0332



0333



0334

0328 鯽魚解剖

紅藍色素注射,標本縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0329 青蛙(或蟾蜍)的解剖

紅藍色素注射,標本縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0330 龜內臟解剖

紅藍色素注射,標本縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0331 鴿的解剖

紅藍色素注射,標本縛於玻璃板上,右側前後肢去掉,消化系統拉出,盤旋於右側玻璃板上,浸於福爾馬林中,附標籤註解。

0332 兔的解剖

紅藍色素注射,標本縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0333 兔生殖排泄系統

紅藍色素注射,自腎向上體壁及內臟完全去掉,自腎以下留體壁及生殖排泄器官,後肢從膝蓋以下去掉,縛於玻璃板上,保存於福爾馬林中,附標籤註解。

0334 兔呼吸循環系統

紅藍色素注射,氣管、肺、心及主要血管抽出縛於玻璃板上,左肺解剖示氣管分枝,另附頭部矢狀斷,留半側,示鼻、咽喉及喉頭,保存於福爾馬林中,附標籤註解。

0335 脊椎動物五綱的腦解剖

包括魚、蛙(蟾蜍)、龜、兔五種動物的腦,按進化次序先後排列,示腦之各部及小段脊髓,其主要腦神經和脊神經根,標本縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0336 鯽魚神經系統

神經大部自骨骼抽出,保留腿弓,示腦脊髓及主要腦神經,標本縛於玻璃板上,浸於福爾馬林中保存,附標籤註解。

浸製解剖標本



0337 青蛙(或蟾蜍)的神經系統

神經自骨骼抽出,示腦、脊髓及主要腦神經,脊髓神經叢,標本縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0338 兔的神經系統

神經自骨骼中抽出,示腦、脊髓及主要腦神經,標本縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0339 鵪鶉的神經系統

神經自骨骼中抽出,示腦、脊髓及主要腦神經,標本縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0340 蛙的發育順序

標本內分七個主要時期,從卵到成蛙,各期均裝於藥水安瓶內,用福爾馬林保存,按發生先後裝於玻璃盒內,發生各期具標籤註解。

0341 蚌的內部構造

一側外殼打開,足部作解剖,顯示消化生殖等器官,一側外殼與一側解剖標本,均縛於玻璃板上,浸於福爾馬林中,附標籤註解。

0342 蚯蚓解剖(示內臟)

二條標本並列縛於玻璃板上,一條示外部形態,一條沿背線作解剖,示內部構造,浸於福爾馬林中,附標籤註解。

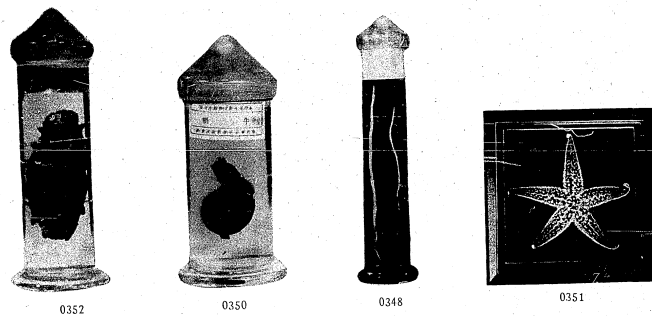
0343 蚯蚓解剖(示神經系和生殖系)

標本從背線解剖開,去掉消化器官,示神經生殖系之構造,縛於玻璃板上,浸於福爾馬林中保存,附標籤註解。

0345 烏賊解剖示內臟

紅藍色素注射腹側剖開,示腿及消化生殖等器官,縛於玻璃板上,瓶裝福爾馬林保存,附標籤註解。

浸製示範標本



0346 海月水母

標本浸於裝有福爾馬林的標本瓶中。

0347 海馬

標本縛於玻璃板上,福爾馬林保存。

0348 蛔蟲外形(示雌雄)

標本按自然姿勢,縛於玻璃板上,瓶裝福爾馬林保存。

0349 螻蛄

標本按自然姿勢,縛於玻璃板上,瓶裝福爾馬林保存。

0350 蝸牛

標本按自然姿勢,縛於玻璃板上,瓶裝福爾馬林保存。

0351 海星

乾製裝於防塵玻璃盒內。

0352 海參

標本縛於玻璃板上,觸手管足伸出,瓶裝福爾馬林保存。

0353 比目魚

標本縛於玻璃板上,福爾馬林保存。

0354 蜥蜴

標本按自然姿勢,縛於玻璃板上,瓶裝福爾馬林保存。

0355 蜈蚣和馬陸

標本並列縛於玻璃板上,福爾馬林保存。

0356 狗魚

標本縛於玻璃板上,福爾馬林保存。

0357 蝶蟲

標本全蟲縛於玻璃板上,保存於福爾馬林內。

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剝製標本



0366



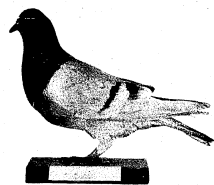
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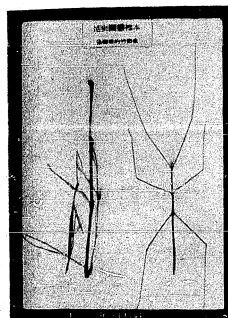
0363

- 0358 野鴨(♂)
剝製自然姿勢,裝於台板上。
- 0359 野鴨(♀)
剝製自然姿勢,裝於台板上。
- 0360 啄木鳥
剝製自然姿勢,站於樹枝固定於台板上。
- 0361 蒼鷹
剝製自然姿勢,站於樹枝固定於台板上。
- 0362 貓頭鷹
剝製自然姿勢,站於樹枝固定於台板上。
- 0363 鴿
剝製自然姿勢,裝於台板上。
- 0364 北京鴨
剝製自然姿勢,站於台板上。
- 0365 蝙蝠
自然姿勢,二翅展開,站於樹枝上,附台板。
- 0366 松鼠
自然姿勢,站於樹枝上,附台板。
- 0367 鸚鵡
自然姿勢,裝在台板上。
- 0368 鸚鵡
剝製自然姿勢,架於台板上。

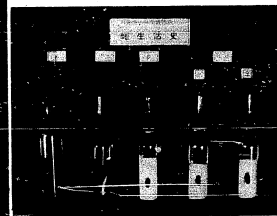
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昆蟲標本



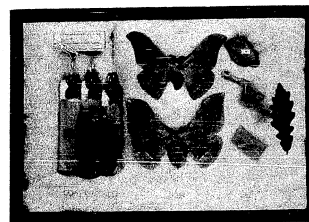
0375



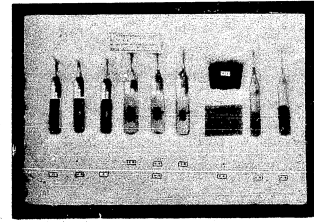
0374



0376



0371



0372

- 0369 蝗蟲生活史
蟲期完整,雌蟲分齡,幼期液浸藥水安瓶保存,附被害狀,共裝於玻璃盒內。
- 0370 菜粉蝶生活史
蟲期完整,幼期液浸藥水安瓶保存,附被害狀,共裝於玻璃盒內。
- 0371 柞蠶生活史
蟲期完整,幼蟲液浸藥水安瓶保存,附柞蠶網,共裝於玻璃盒內。
- 0372 蜜蜂生活史
蟲期完整,成蟲包括:母蜂、雄蜂、工蜂各一只,幼期液浸藥水安瓶保存,附蜂巢、巢礎、蜂蛋、蜂蛹,共裝於玻璃盒內。
- 0373 蠶蛾生活史
蟲期完整,幼蟲分齡,幼期液浸藥水安瓶保存,附網共裝於玻璃盒內。
- 0374 蠅的生活史
蟲期完整,幼蟲液浸藥水安瓶保存,共裝於玻璃盒內。
- 0375 竹節蟲
整姿狀態各一藏竹枝,共裝於玻璃盒內。
- 0376 枯葉蝶
整姿狀態各一藏竹枝,共裝於玻璃盒內。
- 0377 螟蛾生活史
蟲期完整,幼蟲液浸藥水安瓶保存,附被害狀,共裝於玻璃盒內。
- 0378 桑尺蠖

植 物 學 切 片

0379/1001 細菌三型	0387/1050 椴木或木槿三年生枝的橫斷面
0380/1014 蠶蓋的縱斷面	0388/1055 頂芽的縱斷面
0381/1017 單胞藻	0389/1058 葉的橫斷面
0382/1018 水綿(示接合生殖)	0390/1059 蠶豆葉下表皮裝片
0383/103 蕨的孢子葉的橫斷面(示子囊 羣)	0391/1086 花粉管萌發裝片
0384/1031 蕨的原葉體(示雌器或雄器)	0400/1087 小麥種子縱切
0385/1078 蕨原葉體(示幼孢子體)	0401/1098 洋蔥皮裝片
0386/1040 根的縱切片	0402/ 黑黴裝片
	0403/ 青黴切片

動 物 學 切 片

0404/2010 水螅帶芽體裝片	0409/2041 蝨
0405/2011 水螅縱斷面	0410/2050 蜜蜂口器
0406/2023 條蟲成熟節片	0411/2057 蜜蜂的第三對胸足
0407/2024 蠹蟲裝片	0412/2065 昆蟲復眼表面觀
0408/2032 蚯蚓橫斷面	0413/ 棉蚜裝片

人 體 生 理 解 剖 學 切 片

0414/3011 疏松結締組織伸展裝片	0427/3094 脊髓橫切
0415/3012 纖維結締組織(筋腱)	0428/3124 動靜脈管橫切
0416/3016 軟骨組織的橫斷面	0429/3128 硬骨組織的橫斷面
0417/3026 人血塗片	0430/3129 鼻粘膜切片
0418/3027 蛙血塗片	0431/3137 舌葉狀乳頭
0419/3029 心臟肌切片	0432/3143 胃壁橫切
0420/3034 脊髓運動細胞塗片	0433/3147 橫紋肌縱橫切
0421/3038 運動神經末梢裝片	0434/3148 小腸壁切片(示腸壁及腸絨毛)
0422/3039 人皮過毛囊切片	0435/3149 腎臟縱切片
0423/3040 人皮過汗腺切片	0436/3144 鴿血塗片
0424/3064 肺切片	0437/3150 上皮組織
0425/3081 腎臟血管注射切片	0438/ 平滑肌分離裝片
0426/3088 哺乳類卵巢切片	

STAT

化学玻璃仪器价目單

CHEMICAL APPARATUSPRICE LIST

CIF Calcutta

1101 燒杯 硬質 格氏 Griffin

Beakers

Capacity: ml. 50 100 150 200 250 300 400 500 600 800
Price: @SH. 0/8 0/9 0/11 1/1 1/3 1/5 1/6 1/8 1/10 2/31000 2000 2500 3000 5000
3/4 7/7 9/10 12/10 24/3

1102 高型燒杯 硬質 裴氏 Berzelius

Beakers, tall pattern

Capacity: ml. 50 100 150 200 250 300 400 500 600 800
Price: @SH. 0/9 0/11 1/1 1/3 1/5 1/6 1/10 2/2 2/5 3/-1000 2000
4/5 4/10

1103 三角燒杯 硬質 費氏 Phillips

Beakers

Capacity: ml. 125 250 300 500
Price: @SH. 1/1 1/5 1/6 2/2

1111 平底燒瓶 硬質 弗氏 Florence

Boiling flasks with flat bottom

Capacity: ml. 50 100 150 200 250 300 500 1000 1500 2000
Price: @SH. 0/8 0/9 0/11 1/1 1/3 1/5 1/8 2/7 4/7 6/5
2500 3000 5000 7500 10000 15000 20000 25000
7/11 9/10 15/2 21/- 28/9 42/5 54/6 63/8

1112 平底燒瓶 大口 短頸 硬質

Flasks, wide mouth, with flat bottom, short neck

Capacity: ml. 100 150 250 500
Price: @SH. 0/11 1/3 1/6 1/10CHINA NATIONAL INSTRUMENTS IMPORT CORP.
SHANGHAI
(IMPORTERS & EXPORTERS)

化学玻璃仪器价目單

CHEMICAL APPARATUS

PRICE LIST

1115 圓底燒瓶 硬質

Flasks, with round bottom

Capacity: ml. 50 100 150 200 250 300 500 1000 1500 2000

Price: @ SH. 0/8 0/9 0/11 1/1 1/3 1/5 1/8 2/7 4/7 6/5

2500 3000 5000 10000 15000 20000 25000

7/11 9/10 15/2 28/9 42/5 54/6 63/8

1116 圓底燒瓶 厚口 硬質

Flasks, with round bottom & rolled neck

Capacity: ml. 250 500 1000 1500 2000 2500 3000 5000 7500

Price: @ SH. 1/6 2/- 3/- 5/2 6/5 7/11 9/10 15/2 21/-

10000 15000 20000 25000

28/9 42/5 54/6 63/8

1117 圓底燒瓶 厚口 短頸 硬質

Flasks, with round bottom & short rolled neck

Capacity: ml. 250 500 1000 1500 2000 2500 3000 5000 7500

Price: @ SH. 1/6 2/- 3/- 5/2 6/5 7/11 9/10 15/2 21/-

10000 15000 20000 25000

28/9 42/5 54/6 63/8

1121 三角燒瓶 硬質 欽氏 Erlenmeyer

Flasks

Capacity: ml. 50 100 125 150 200 250 300 500 1000

Price: @ SH. 0/8 0/9 0/10 0/11 1/1 1/3 1/5 1/8 2/7

2000 3000 5000

6/5 9/10 15/2

1131 蒸餾燒瓶 具支管 硬質

Distilling Flasks, with side arm.

Capacity: ml. 30 60 125 250 500 1000 2000

Price: @ SH. 1/5 1/6 2/- 2/7 3/11 5/6 12/1

化学玻璃仪器价目單

CHEMICAL APPARATUSPRICE LIST

1135 分餾燒瓶 硬質 克氏 Claissen

Distilling Flasks

Capacity: ml.	60	125	250	500	1000	2000
Price: @ SH.	3/4	3/10	4/7	6/-	9/1	15/2

1161 曲頸甑 具玻塞 硬質

Retorts with tubulature and ground in stopper

Capacity: ml.	125	250	500	1000	2500	5000	7500	10000
Price: @ SH.	4/7	6/-	7/9	9/10	19/8	33/4	48/6	68/2

1171 蒸發皿 平底 硬質

Evaporating dishes, flat bottom

Diameter: mm.	60	90	120	150
Price: @ SH.	1/6	2/2	2/6	3/4

1175 錶面皿

Watch glass

Diameter: mm.	45	60	80	90	100	120	150
Price: @ SH.	0/4	0/6	0/8	0/9	0/9	0/11	1/1

1201 分餾管 無球

Distilling tubes, without bulb

Price: @ SH.	0/11
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化学玻璃仪器价目單

CHEMICAL APPARATUSPRICE LIST

1202 分餾管 一球

Distilling tubes, with one bulb

Price: @ SH.

1/3

1203 分餾管 二球

Distilling tubes, with two bulbs

Price: @ SH.

1/6

1211 冷凝管 空气冷凝

Air Condenser

Length: mm.

Price: @ SH.

200	250	300	400	500	600
0/9	0/10	0/11	1/1	1/3	1/6

1212 冷凝管 直形 活心

Condenser with rubber connection

Length of outside tube: mm.

Price: @ SH.

200	250	300	400	500	600
3/10	4/7	5/4	6/-	6/10	8/4

1214 冷凝管 球形 亞氏 Allihn

Condenser with bulbs

Length of outside tube: mm.

Price: @ SH.

200	250	300	400	500	600
4/10	5/7	6/5	7/7	9/1	11/4

1221 接 管 直形

Connection tube, straight

Dia. outside: mm.

Length of tube: mm.

Price: @ SH.

18	25	30
150	180	200
0/6	0/8	0/11

化学玻璃仪器价目單

CHEMICAL APPARATUSPRICE LIST

1222 接 管 弯形

Connection tube, bent

Dia. outside: mm. 18 25 30

Length of tube: mm. 150 180 200

Price: @ SH. 0/8 0/10 1/2

1224 联 接 管 T 形

Connection tubes with branch, T Shaped

Price: @ SH. 0/3

1225 联 接 管 Y 形

Connection tubes with branch, Y Shaped

Price: @ SH. 0/4

1226 联 接 管 U 形

Connection tubes with branch, U Shaped

Price: @ SH. 0/5

1231 試 驗 管 不捲口 硬質

Test tubes, without rim

Dia. outside mm. 10 12 12 15 18 18 21 21 25 25

Length: mm. 100 75 100 150 150 180 150 180 150 200

Price: @ SH. 0/2 0/2 0/2 0/3 0/3 0/4 0/4 0/5 0/6 0/8

1232 試 驗 管 捲口 硬質

Test tube, with rim

Dia. Outside: mm. 15 18 18 21 21

Length of tubes: mm. 150 150 180 150 180

Price: @ SH. 0/3 0/3 0/3 0/4 0/4

化学玻璃仪器价目單

CHEMICAL APPARATUSPRICE LIST

1236 試驗管 刻度 硬質

Test tubes graduated

Capacity: ml.

5 10 20 30 50

Price: @ SH.

1/1 1/3 1/8 1/10 2/3

1241 离心管 硬質

Centrifuge tubes

Capacity: ml.

10 15 30 50

Price: @ SH.

0/5 0/6 0/9 1/1

1242 离心管 刻度 硬質

Centrifuge tubes

Capacity: ml.

10 15 30 50

Price: @ SH.

1/6 1/10 2/6 3/4

1271 活塞玻璃管 直形 二路

Stopcocks, straight

Bore of plug: mm.

2 4

Price: @ SH.

3/- 3/4

1277 活塞玻璃管 斜孔 三路

Stopcocks, 3 way with 2 oblique bores

Bore of plug: 2 mm.

Price: @ SH.

5/4

POOR ORIGINAL

化学玻璃仪器价目单

CHEMICAL APPARATUSPRICE LIST

1324 干燥管 U 形

Dry tubes, U form

Dia. outside: mm.

13 15 20

Length: mm.

100 150 200

Price: @ SH.

0/9 0/11 1/1

1325 干燥管 U 形 具支管

Dry tubes, U form with side arms

Dia. outside: mm.

13 15 20

Length: mm.

100 150 200

Price: @ SH.

1/1 1/3 1/5

1351 干燥器 附磁板

Desiccators with porcelain plate

Dia. external: mm.

150 180 210 240 300

Price: @ SH.

13/8 21/- 33/4 48/6 81/10

1381 酒精灯

Alcohol lamps

Capacity: ml.

150 250

Price: @ SH.

1/6 1/10

1391 研钵 具杵

Mortars with pestle

Diameter: mm.

60 75 90 120 150 180

Price: @ SH.

2/2 3/- 3/6 5/8 7/7 13/-

POOR ORIGINAL

化学玻璃仪器价目单

CHEMICAL APPARATUSPRICE LIST

1422 放水瓶 一蒸馏水瓶 具下口活塞及玻塞

Aspirator bottles ground in stopcocks & stopper

Capacity: ml.	2500	5000	10000	20000
Price: @ SH.	18/2	25/9	37/11	72/8

1501 漏斗 短管

Funnel, short stem

Diameter: mm.	40	50	60	75	90	120	150	180	210	240	300
Length of tube mm.	50	50	60	75	90	120	150	150	180	180	180
Price: @ SH.	0/9	0/11	1/1	1/3	1/5	1/8	2/2	3/-	4/7	7/7	12/1

1502 漏斗 短管 正60°角

Funnel, angle 60°, long stem

Diameter: mm.	50	60	75
Length:	150	150	150
Price: @ SH.	1/6	1/10	2/3

1521 安全漏斗 直形

Funnel tubes, thistle top, straight form

Length of tubes: 300 mm.	Price: @ SH.	0/7
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1522 安全漏斗 弯形

Funnel tubes, thistle top, with loop

Length of tubes: 300 mm.	Price: @ SH.	0/9
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POOR ORIGINAL

化学玻璃仪器价目单

CHEMICAL APPARATUSPRICE LIST

1523 安全漏斗 環頸一球

Funnel tubes, thistle top with loop and bulbs

Length: 300 mm.

Price: @ SH. 0/11

1524 安全漏斗 環頸二球

Funnel tubes, thistle top with double loop and 2 bulbs

Length: 300 mm.

Price: @ SH. 1/3

1541 分液漏斗 球形 厚玻璃

Separating funnels heavy globe shape

Capacity: ml. 1000 2000 3000 5000

Price: @ SH. 30/4 45/5 68/2 90/11

1601 量筒 具嘴

Graduated Cylinders, with spout

Capacity: ml. 10 25 50 100 250 500 1000 2000

Graduation: ml. 1/5 1/2 1 2 5 5 10 20

Price: @ SH. 1/6 1/10 2/2 2/7 4/7 6/10 9/10 18/-

1602 量筒 具玻璃塞

Stoppered graduated cylinder

Capacity: ml. 10 25 50 100 250 500 1000 2000

Graduation: ml. 1/5 1/2 1 2 5 5 10 20

Price: @ SH. 2/6 3/4 3/11 4/10 6/10 9/10 13/8 21/-

POOR ORIGINAL

化學玻璃儀器價目單

CHEMICAL APPARATUSPRICE LIST

1605 量 酸 筒 17.5 ml. 处刻度

Graduated cylinder, for acids

Price: @ SH.

1/6

1611 量 杯 錐形

Graduated cylinder conical

Capacity: ml. 10 20 50 100 250 500 1000

Graduation: ml. 1 2 5 5 10 20 50

Price: @ SH. 1/6 1/10 2/2 2/7 4/7 7/7 10/7

1621 量 瓶 具玻璃塞

Volumetric flasks with stopper

Capacity: ml. 25 50 100 250 500 1000 2000

Price: @ SH. 3/8 3/11 4/7 5/4 6/- 9/1 13/8